PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner
US Department of Commerce
United States Patent and Trademark Office, PCT
2011 South Clark Place Room CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 10 May 2001 (10.05.01)	
International application No. PCT/NL00/00556	**Applicant's or agent's file reference** P50415PC00
International filing date (day/month/year) 08 August 2000 (08.08.00)	**Priority date** (day/month/year) 17 August 1999 (17.08.99)
Applicant KRAAN, Diederik	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

13 December 2000 (13.12.00)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Pascal Piriou
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P50415PC00	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/NL00/00556	International filing date (day/month/year) 08/08/2000	Priority date (day/month/year) 17/08/1999
International Patent Classification (IPC) or national classification and IPC A47J31/40		
Applicant SARA LEE/DE N.V. et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets. (15)

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
13/12/2000	27.12.2001
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx 31 651 epo nl Fax +31 70 340 - 3016	Authorized officer Lehe, J Telephone No. +31 70 340 3108

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL00/00556

I. Basis of the report

1. With regard to the elements of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

1-11	with telefax of	12/09/2001

Claims, No.:

3-5,7-10	as originally filed	
1,2,6	with telefax of	12/09/2001

Drawings, sheets:

1/7-7/7	as originally filed	

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL00/00556

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

6. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

8. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-19
	No:	Claims	
Inventive step (IS)	Yes:	Claims	6-19
	No:	Claims	1-5
Industrial applicability (IA)	Yes:	Claims	1-19
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

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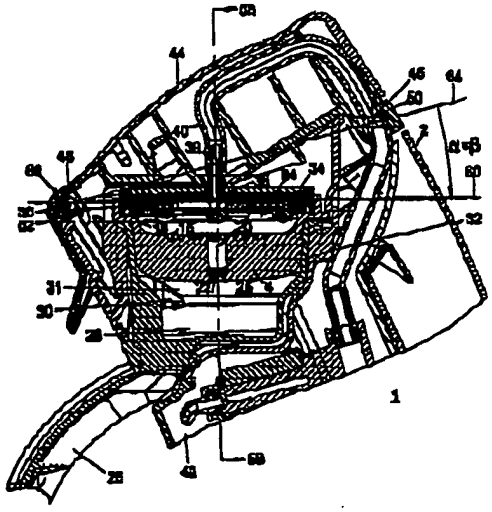
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS FOR PREPARING COFFEE



(57) Abstract: The apparatus for preparing coffee comprises a holder arranged for receiving a pouch made of filter material and filled with a product to be extracted. The holder comprises at least one outflow opening and one access opening for placing the pouch in the holder. The apparatus further comprises a cover for closing and releasing the access opening and clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder.

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7/pats

Title: Apparatus for preparing coffee

The invention relates to an apparatus for preparing coffee, comprising a holder arranged for receiving a pouch made of filter material and filled with a product to be extracted, the holder comprising at least one outflow opening and one access opening for placing the pouch in the holder, the apparatus further comprising a cover for closing and releasing the access opening and clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder.

Such an apparatus is known from the international patent application WO 94/02059. In this publication, the apparatus, as shown in Fig. 11, is provided with clamping means, which engage a circumferential edge of the cover for pressing the cover and the holder towards each other when the cover closes off the holder. A disadvantage of the known apparatus is that the frequent opening and closing of the holder reduces the reliability of the liquid seal between the cover and the holder. When, in use, under high pressure, hot water is supplied to the holder for preparing coffee, it may therefore happen that water leaks from the holder. This is caused by improper closure of the cover and the holder. If water leaks out, even if only to a slight extent, the pressure in the holder decreases. When the pressure in the holder decreases, this leads to a deterioration of the quality of the coffee extract obtained. This is the case in particular when the outflow opening has such a small diameter that the coffee extract spouts from the outflow opening for obtaining coffee with a small-bubble froth layer (café crème). When the pressure decreases, however, it may happen that the speed at which the coffee extract spouts from the outflow opening is not sufficient for preparing café crème.

The object of the invention is to provide an apparatus that provides a solution to the above-stated problem. The construction should then be so reliable that even after the holder has frequently been closed and opened again, still a reliable seal between cover and holder can be obtained.

To that end, the apparatus according to the invention is characterized in that the clamping means for pressing the cover and the holder towards each other when the cover closes off the access opening engage at least two mutually different engagement positions located on an external surface of the cover, the cover further comprising a connection located on the external surface of the cover, for the supply of water to the holder, the two mutually different engagement positions each not coinciding with the positions on the external surface where the connection is located, the cover being rotatably connected with the clamping means for rotation over a limited angle about an engagement rotation axis, which engagement rotation axis extends along the two mutually different engagement positions. What is achieved in that the clamping means engage at least two mutually different engagement positions located on an external surface of the cover, is that the engagement positions do not each need to coincide with the position on the external surface where the connection is located, and that, moreover, the cover can be connected to the clamping means for rotation over a limited angle about the engagement rotation axis, the engagement rotation axis extending through the two mutually different engagement positions. The engagement positions can then be used for movably connecting the cover and the clamping means and can moreover be used for pressing the cover and the holder towards each other, when the cover is to close off the access opening of the holder. Preferably, therefore, the cover is movably connected to the clamping means at the two engagement positions. More in particular, the connection is located approximately in the center of the external surface of the cover. In this manner, at a central position, water can be supplied to the holder. In particular, the connection is also located approximately centrally of the at least two engagement positions. Then, the force exerted by the clamping means on the engagement positions of the cover when the cover closes off the holder can be equivalent to a force exerted by the clamping means on the

holder at a position coinciding with the center of the cover, where th connection is preferably located.

This has as a result that a good liquid seal between the cover and the holder is obtained at all times. To that end, in particular, the external surface is of at least substantially circular design.

According to a preferred embodiment of the apparatus, the apparatus further comprises a housing to which the holder is detachably connected, the clamping means comprising a rotation element with a first and a second opposite end, the rotation element adjacent its first end being rotatably connected to the housing for rotation about a horizontally directed first rotation axis between a first and a second rotational position, for closing off the access opening of the holder in the second rotational position, and releasing the access opening again in the first rotational position, the apparatus further comprising a closing arrangement for detachably connecting the rotation element, adjacent the second end, with the housing when the cover in the second rotational position closes off the access opening, the cover being attached to the rotation element such that in the second rotational position, the rotation axis extends along a first side of the cover and the second end is located on a second side of the cover, located opposite the first side.

According to a first further elaboration of this embodiment, the first rotation axis is located above a flat plane through the access opening of the holder. An advantage of this embodiment is that the housing can have a relatively narrow design. In this connection, the apparatus can be further characterised in that the plane defined by the first rotation axis and the second end and the plane through the opening include an acute angle when the cover closes off the holder in the second rotational position.

In particular, the cover is movably connected to the rotation element, so that the cover, when the holder is being closed, can optimally position itself relative to the holder.

According to a further elaboration, the engagement rotation axis runs at least substantially parallel to the first rotation axis. When during closure of the cover a part of the edge of the cover initially engages the holder, it is possible, upon further rotation of the rotation element about the first rotation axis, for the cover to simultaneously rotate through a limited angle about the engagement rotation axis. This ensures that the cover is positioned optimally relative to the holder, that is, the cover is positioned such that it seals the holder liquid-tightly. To guarantee, when closing the holder, that the cover and the holder initially engage each other at one point only, the apparatus preferably further comprises spring means which exert such a force on the cover that an underside of the cover comes to lie approximately parallel to the plane defined by the first rotation axis and the second end by rotation of the rotation element about the engagement rotation axis when the cover is lifted off the holder by rotation of the rotation element about the first rotation axis.

According to a highly advantageous embodiment, the spring means comprise a flexible hose which is attached to the cover for supplying hot water to the holder. The flexible hose then has a double function.

The invention will be further elucidated on the basis of the drawing. In the drawing:

Fig. 1 shows a cross section of a first embodiment of an apparatus according to the invention, in which a holder is closed by a cover;

Fig. 2 shows a cross section of the apparatus according to Fig. 1 upon a first step towards opening the holder;

Fig. 3 shows a cross section of the apparatus according to Fig. 1 upon a second step towards opening the holder;

Fig. 4 shows a cross section of the apparatus according to Fig. 1 upon a third step towards opening the holder;

Fig. 5a shows a cross section of the apparatus according to Fig. 1 upon a fourth and final step towards opening the holder;

Fig. 5b shows a front view of the apparatus of Fig. 1 in the condition according to Fig. 5a;

Fig. 6a shows a top plan view of a pouch which can be applied in the apparatus according to Fig. 1; and

Fig. 6b shows a cross section along the plane A-A of Fig. 6a.

Referring to Figs. 1-5b, presently a first embodiment of an apparatus according to the invention will be discussed.

The apparatus 1 for preparing coffee comprises a housing 2, comprising a holder 4 detachably connected to the housing. The holder 4 is arranged for receiving a pouch 6, made of a filter material and filled with a product to be extracted, such as ground coffee, as is shown in Figs. 6a and 6b.

In this example, the pouch 6 consists of an upper sheet 8 and a lower sheet 10, each made of filtering paper. The upper sheet 8 and the lower sheet 10 are each of disc-shaped design and joined together adjacent their peripheral edges 12. This joint forms a circumferential sealing seam 14, closed in itself. The holder 4 is of cup-shaped design and consists of a bottom 16 and an upright, circumferential side wall 18, connected to the bottom. Provided in the bottom 16 is a recess 20, provided with at least one outflow opening 22. At its upper end, the holder is provided with an access opening 24.

The housing 2 further comprises a liquid receiving space 26 which comprises an outflow opening 26. Present in the liquid receiving space 26 is a collecting reservoir 28 of cup-shaped design (of the type described in Dutch patent application no. 10.06039). In a side wall 31 of the collecting reservoir 28, outflow openings 30 are provided. A bottom 33 of the collecting reservoir is, in top plan view, of substantially spherical design. In this example, the liquid receiving space 26 is formed by a cup-shaped element 32, open at the top, which is so designed at its upper end that the holder 4 can be detachably placed on it.

The apparatus further comprises a cover 34 for closing and releasing the access opening 24 of the holder. At its underside, the cover 34 is fitted with

a sealing ring 36, which, in use, can cooperate with the holder 4. At its upper side, the cover comprises a connection comprising an inflow opening 38 and a tubelet which, via a liquid duct 40, is connected to a device 42 for heating hot water. The device 42 is of a type known per se, such as, for instance, a hot water boiler, so that a further explanation on this point can be dispensed with.

The apparatus further comprises a rotation element 44 having a first 46 and second 48 end, located opposite each other. Adjacent its first end 46, the rotation element is connected to the housing 2 for rotation about a horizontally directed first rotation axis 50. The rotation element can rotate about the first rotation axis 50 between a first (see Fig. 5) and a second (see Fig. 1) rotational position. When the rotation element 44 is in the first rotational position, the access opening 24 of the holder 4 is cleared (see Fig. 5a). When, by contrast, the rotation element is in the second rotational position, the holder is closed off, that is, the access opening 24 is closed off by the cover 34 (see Fig. 1).

The apparatus further comprises a closing arrangement 52 for detachably connecting the rotation element to the housing 2 adjacent the second end 48 of the rotation element 44 when the cover 34 closes off the access opening 24 in the second rotational position (see Fig. 1).

As can be properly seen in Fig. 1, the cover 34 is attached to the rotation element 44 such that in the second rotational position the rotation axis 50 extends along a first side 54 of the cover and the second end 48 is located at a second side 56 of the cover, located opposite the first side (see Fig. 2).

The cover 34 is movably connected to the rotation element 44. As can be properly seen in Fig 5b, the cover 34 is connected, at the upper side of its outside surface, to two raised arms 102a and 102b, extending upwards and each comprising an opening104a, 104b, respectively. Extending through each of the openings 104a and 104b is an arm 106a, 106b of the rotation element 44. These arms are much thinner than the openings 104a and 104b. This has

as a result that the cover is movably connected to the rotation element 44. Furthermore, the cover is connected to the rotation element 44 for rotation over a limited angle about an engagement rotation axis 58.

The raised arms 102a, 102b extend upwards from positions on the external surface 100, which positions will be designated hereinbelow as two mutually different engagement positions 108a, 108b. Accordingly, these engagement positions are located at the bottom of the raised arms 102a and 102b. From the drawing, it is clear that the connection 39 for the supply of water to the holder is located at such a position that the two mutually different engagement positions do not each coincide with the position on the external surface where the connection 39 is located. Furthermore, the cover is then connected to the clamping means for rotation over a limited angle about the engagement rotation axis 58, that is, connected to the clamping element 44, comprising the arms 106a, 106b and the raised arms 102a, 102b, the engagement rotation axis 58 extending along, that is, in the proximity of the two mutually different engagement positions. As the openings 104a and 104b are larger than a cross section of the arms 106a and 106b, this means that the cover 34, in addition to being rotatable about the engagement axis 58, is also connected to the rotation element 44 so as to be translatable over a certain distance. Accordingly, the cover is movably connected to the rotation element at the two engagement positions 108a and 108b. The connection 39 is located approximately in the center between the engagement positions 108a and 108b. Furthermore, the connection 39 is located approximately in the center of the external surface of the cover 34. In this example, the external surface of the cover 34 is of circular design. Also, in this example, a line through the at least two engagement positions 108a and 108b is approximately parallel to the first rotation axis 50. This line approximately coincides with the engagement rotation axis 58.

Characteristic of the embodiment according to Figs. 1-5b is that the first rotation axis 50 is located above a flat plane 60 through the access

opening 24 of the holder 4 (Fig. 1). The first rotation axis is parallel to this plane 60. Further, the engagement rotation axis 58 runs at least approximately parallel to the first rotation axis 50. Thus, the cover is connected to the rotation element 44 for rotation about the engagement rotation axis through a limited angle of rotation.

As can be properly seen in Fig. 1, the plane 64 defined by the first rotation axis 50 and the second end 48, and the plane 60 through the access opening 24 include an acute angle α when the cover closes off the holder in the second rotational position. An intersecting line 66 of the two last-mentioned planes is located adjacent the second end 48.

The apparatus further comprises spring means 62a and 62b, which exert such a force on the cover 84 that the cover rotates about the engagement rotation axis 58 in a direction such that angle α is reduced when the cover is lifted off the holder by rotation of the rotation element 44 about the first rotation axis 50 (see also Fig. 5a). In this example, the spring means 62b comprise inter alia the flexible duct 40.

The apparatus further comprises clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder.

When the cover is in the second position, the clamping means engage the outer surface 100 of the cover at at least two mutually different engagement positions 108a and 108b. In this example, the clamping means comprise the rotation element 44 with the arms 106a, 106b, and the raised arms 102a, 102b.

The operation of the apparatus is as follows. First, the closing arrangement 52 is operated so that the cover 24 can be lifted off the holder 4 by means of rotation of the rotation element 44 about the first rotation axis 50. The resultant situation is shown in Fig. 5a. Then the pouch 6, as shown in Figs. 6a and 6b, is placed in the holder 4. To that end, the holder 4 can be removed from the housing 2, whereafter the holder 4, together with the pouch

6, is replaced in the housing 2. Then, the cover can be closed by moving the first end 46 of the rotation element 44 downwards, the rotation element 44 thereby rotating about the first rotation axis 50. The spring means 62a, 62b provide that such force is exerted on the cover that an underside of the cover comes to lie approximately parallel to the plane defined by the first rotation axis and the second end, by rotation of the rotation element about the engagement rotation axis when the cover is lifted off the holder by rotation of the rotation element about the first rotation axis. This means that, during closure, the second side 58 of the cover first of all contacts the holder 4. At that time, the arms 106a, 106b of the clamping element 44 do not yet press on the arms 102a, 102b of the cover. When, subsequently, the second end 48 is moved further downwards, the first side 54 of the cover will be gradually moved in the direction of the holder 4. In the process, the angle β between the plane 64 and the plane 90 through the underside of the cover 34 will increase from approximately 0 degrees (Fig. 4) to a value of α (in Fig. 1). As a result of this movement, it is provided that the cover 34 is placed symmetrically on the holder 4. This situation is shown in Fig. 3.

Thereupon, the closing arrangement 52 is operated, with the result that the second end 48 of the rotation element 44 is pressed down. As a result, the arms 106a, 106b will press on the arms 102a, 102b in a vertically downwardly directed direction. The result is that the cover 34 is pressed upon at a position which, in effect, is located approximately in the center of the external surface of the cover. The force between the sealing ring 36 on the one hand and the holder 4 on the other hand will then be approximately the same at every point of the sealing ring. The deformation of the sealing ring will therefore be likewise approximately the same at every point of the sealing ring. As a result of this last, in turn, an optimum and reliable seal between cover and holder has been obtained. Then the closing arrangement 52 is further operated (see Figs. 1 and 2) for locking the rotation element.

In this example, the closing arrangement 52 is provided with an operating lip 76 which is connected to the rotation element 44 adjacent the second end 48 for rotation about a rotation axis 78. Further, the closing arrangement 52 comprises a closing lip 80 connected to the operating lip 76 for rotation about a rotation axis 82. In the closed position, as is shown in Fig. 1, the rotation axis 82 is located under the rotation axis 78, while further the distance between the rotation axis 78 and the holder 4 is smaller than the distance between the rotation axis 82 and the holder 4. In this example, a free end 84 of the closing lip 80 hooks under a projection 86 of the housing 2. When the closing arrangement 52 is to be opened, a free end 88 of the operating lip 76 is moved upwards, as is shown in Fig. 2. As a result, the free end 84 of the closing lip 80 will move downwards (see Fig. 2), so that the free end 84 can be detached from the projection 86. This situation is shown in Fig. 3. A spring 62c provides that the free end 84 moves in a direction away from the housing 2 and thus becomes automatically detached from the projection 86. This situation is also shown in Fig. 3. Then, the operating lip 76 is moved further upwards (see Fig. 4), whereby the angles α and β are reduced. Then the cover can be opened further, as shown in Figs. 5a and 5b. For closing the cover, the steps discussed with reference to Figs. 1-5b are traversed in the opposite direction.

It is noted that the advantage of the closing arrangement 52 described above is that opening and closing the closing arrangement can be performed through a very light operation of the operating lip 76. As a result of the temporary downward movement of the closing lip 80, when the operating lip 76 is moved upwards (see Fig. 2), and the opposite effect of the closing lip 80 moving upwards when the operating lip 76 is moved downwards, a stable situation is achieved in closed condition, as shown in Fig. 1. Furthermore, by moving the operating lip from the position shown in Fig. 2 to the position shown in Fig. 1, the rotation element 44 is rotated counterclockwise about the rotation axis 50, so that the cover 34 is properly pressed onto the holder 4.

In the closed position, as shown in Fig. 1, hot water can subsequently be supplied to the duct 40. This hot water is supplied via the cover 84 to the top of the pouch 6. This hot water passes through the pouch and proceeds to collect as coffee extract in the recess 20. Then the coffee extract spouts through the spout opening 22 into the collecting reservoir 28. The collecting reservoir 28 is thus filled with coffee extract. As the coffee extract spouts into the surface of the liquid in the collecting reservoir 28, a good café crème is formed. This café crème flows via the outflow opening 30 out of the collecting reservoir to leave the housing via the outlet opening 26.

The invention is not in any way limited to the embodiments described hereinbefore. Thus, other embodiments of the closing arrangement 52 are conceivable. Also, the holder and the cover can have other forms than shown. The holder and the cover can have, for instance, a square instead of a circular cross section. Also, it is not necessary to employ a collecting reservoir 28 as shown in the drawing.

Such variants are understood to fall within the scope of the invention.

Claims

1. An apparatus for preparing coffee, comprising a holder arranged for receiving a pouch made of filter material and filled with a product to be extracted, the holder comprising at least one outflow opening and one access opening for placing the pouch in the holder, the apparatus further comprising a cover for closing and releasing the access opening and clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder, characterized in that the clamping means for pressing the cover and the holder towards each other, when the cover closes off the access opening of the holder, engage at least two mutually different engagement positions located on an external surface of the cover, the cover further comprising a connection located on the external surface of the cover, for the supply of water to the holder, the two mutually different engagement positions each not coinciding with the position on the external surface where the connection is located, and the cover being rotatably connected to the clamping means for rotation over a limited angle about an engagement rotation axis, which engagement rotation axis extends along the two mutually different engagement positions.

2. An apparatus according to claim 1, characterized in that the cover is movably connected to the clamping means, adjacent the two engagement positions.

3. An apparatus according to claim 1 or 2, characterized in that the connection is located approximately centrally of the at least two engagement positions.

4. An apparatus according to any one of the preceding claims, characterized in that the connection is located approximately in the center of the external surface of the cover.

5. An apparatus according to any one of the preceding claims, characterized in that the external surface is of at least substantially circular design.

6. An apparatus according to any one of the preceding claims, characterized in that the apparatus further comprises a housing to which the holder is detachably connected, the clamping means comprising a rotation element with a first and second opposite ends, the rotation element being connected adjacent its first end to the housing for rotation about a horizontally directed first rotation axis between a first and second rotational position for closing the access opening of the holder in the second rotational position and releasing the access opening in the first rotational position, the apparatus further comprising a closing arrangement for detachably connecting the rotation element to the housing adjacent the second end when the cover closes off the access opening in the second rotational position, the cover being connected to the rotation element such that in the second rotational position the rotation axis extends along a first side of the cover and the second end is located on a second side of the cover, located opposite the first side of the cover.

7. An apparatus according to claim 6, characterized in that a line through the at least two engagement positions is located approximately parallel to the first rotation axis.

8. An apparatus according to claim 6 or 7, characterized in that the first rotation axis is above a flat plane through the access opening of the holder.

9. An apparatus according to claim 8, characterized in that an underside of the cover is located at least substantially below a plane defined by the first rotation axis and the second end when the cover closes off the holder in the second rotational position.

10. An apparatus according to claim 9, characterized in that the first rotation axis is parallel to the plane through the opening.

11. An apparatus according to claim 9 or 10, characterized in that the plane defined by the first rotation axis and the second end and the plane through the opening include an acute angle when the cover closes off the holder in the second rotational position.

12. An apparatus according to claim 9, 10 or 11, characterized in that the plane defined by the first rotation axis and the second end and the plane through the opening have an intersecting line located adjacent the second end when the cover closes off the holder in the second rotational position.

13. An apparatus according to claim 12, characterized in that the second engagement rotation axis is connected to the rotation element, the engagement rotation axis being at least approximately parallel to the first rotation axis.

14. An apparatus according to claim 13, characterized in that the apparatus further comprises spring means which exert such a force on the cover that an underside of the cover comes to lie approximately parallel to the plane defined by the first rotation axis and the second end by rotation of the rotation element about the second engagement rotation axis when the cover is lifted off the holder by rotation of the rotation element about the first rotation axis.

15. An apparatus according to claim 14, characterized in that the spring means comprise a flexible hose which is connected to the cover for supplying hot water to the holder.

16. An apparatus according to claim 5, 6 or 7, characterized in that the first rotation axis is located at least approximately in a flat plane through the access opening of the holder.

17. An apparatus according to claim 16, characterized in that an underside of the cover is located at least substantially in a plane defined by the engagement rotation axis and the second end when the cover closes off the holder.

18. An apparatus according to claim 17, characterized in that the first rotation axis is parallel to the plane through the access opening.

19. An apparatus according to claim 17 or 18, characterized in that the plane defined by the engagement rotation axis and the second end and the plane through the opening extend at least approximately parallel when the cover closes off the holder in the second rotational position.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
P50415PC00		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/NL 00/ 00556	08/08/2000	17/08/1999
Applicant		
SARA LEE/DE N.V.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   [ ] the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readble form.

   [ ] the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. [ ] **Certain claims were found unsearchable** (See Box I).

3. [ ] **Unity of invention is lacking** (see Box II).

4. With regard to the **title,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 1

   [ ] as suggested by the applicant.

   [X] because the applicant failed to suggest a figure.

   [ ] because this figure better characterizes the invention.

   [ ] None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/NL 00/00556

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A47J31/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A47J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 904 718 A (LEE DE NV SARA) 31 March 1999 (1999-03-31) claims figures	1,3-19
Y	WO 94 02059 A (NESTLE SA ;FOND OLIVIER (CH); LAVANCHY GERARD (CH); PLEISCH JEAN P) 3 February 1994 (1994-02-03) cited in the application page 27, line 6 - line 31 figures 11,12	1,3-19
A	WO 95 17121 A (MEDITERRANEENNE CAFES ;BLANC JEAN PIERRE (FR); FERRIER CHRISTIAN () 29 June 1995 (1995-06-29) page 13, line 36 - line 40; figure 10	2

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
6 November 2000	27/11/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Scholvinck, T

1

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	WO 96 08990 A (FISCHER DANIEL ;EUGSTER FRISMAG AG (CH)) 28 March 1996 (1996-03-28) page 7, line 27 -page 9, line 3 figures 4-6	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/NL 00/00556

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0904718 A	31-03-1999	NL 1007169 C	31-03-1999
		AU 8713398 A	22-04-1999
		JP 11206573 A	03-08-1999
		US 6009792 A	04-01-2000
WO 9402059 A	03-02-1994	AT 171352 T	15-10-1998
		AU 671650 B	05-09-1996
		AU 4414893 A	14-02-1994
		BR 9305586 A	02-05-1995
		CA 2111990 A	03-02-1994
		DE 69321209 D	29-10-1998
		DE 69321209 T	18-02-1999
		DK 604615 T	14-06-1999
		EP 0604615 A	06-07-1994
		EP 0870457 A	14-10-1998
		ES 2122026 T	16-12-1998
		FI 941256 A	17-03-1994
		JP 6511182 T	15-12-1994
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		NZ 253663 A	28-05-1996
		US 5649472 A	22-07-1997
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		US 5762987 A	09-06-1998
WO 9517121 A	29-06-1995	FR 2713905 A	23-06-1995
		FR 2723524 A	16-02-1996
		AU 699759 B	17-12-1998
		AU 1274995 A	10-07-1995
		BR 9408356 A	26-08-1997
		CA 2178595 A	29-06-1995
		CN 1137742 A,B	11-12-1996
		CZ 9601583 A	14-05-1997
		EP 0735837 A	09-10-1996
		HU 74813 A	28-02-1997
		JP 9506799 T	08-07-1997
		PL 315120 A	14-10-1996
		RO 115013 B	29-10-1999
		RU 2129830 C	10-05-1999
		US 5755149 A	26-05-1998
WO 9608990 A	28-03-1996	DE 9415374 U	02-03-1995
		AU 3566095 A	09-04-1996
		DE 59505973 D	24-06-1999
		EP 0730425 A	11-09-1996
		US 5794519 A	18-08-1998
		ES 2134493 T	01-10-1999

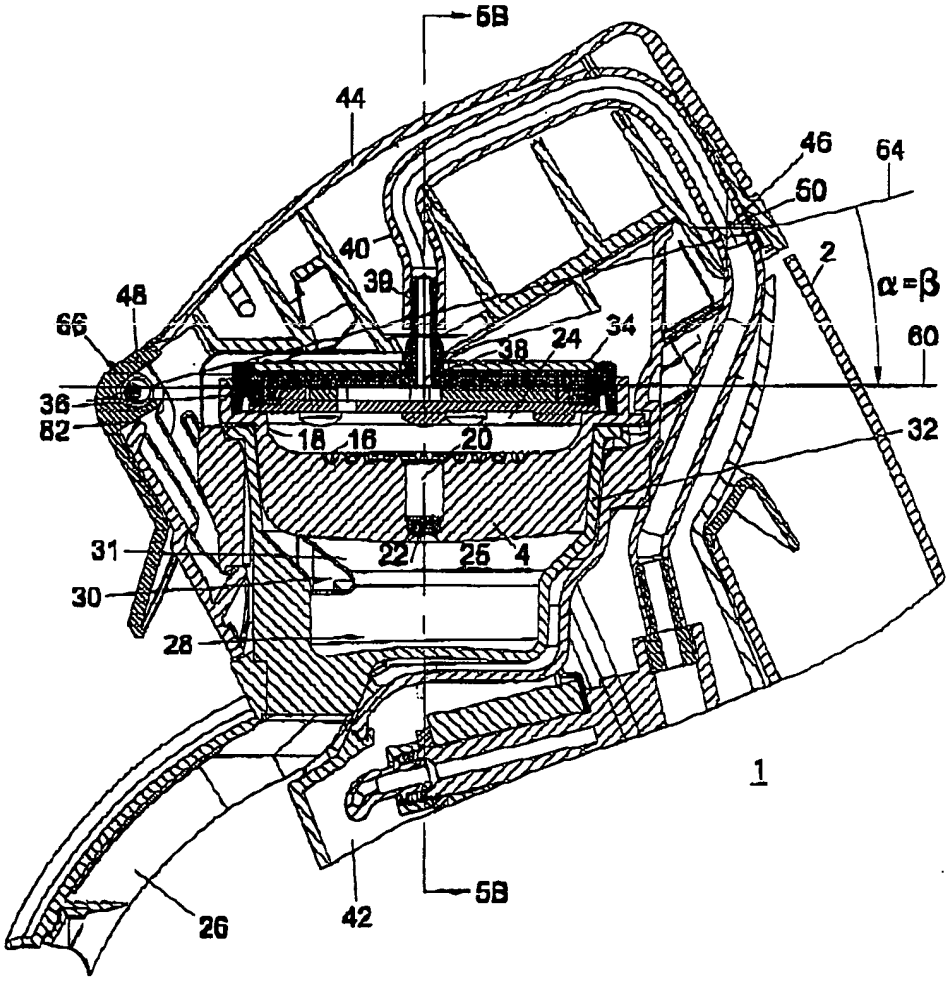
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Fig. 1

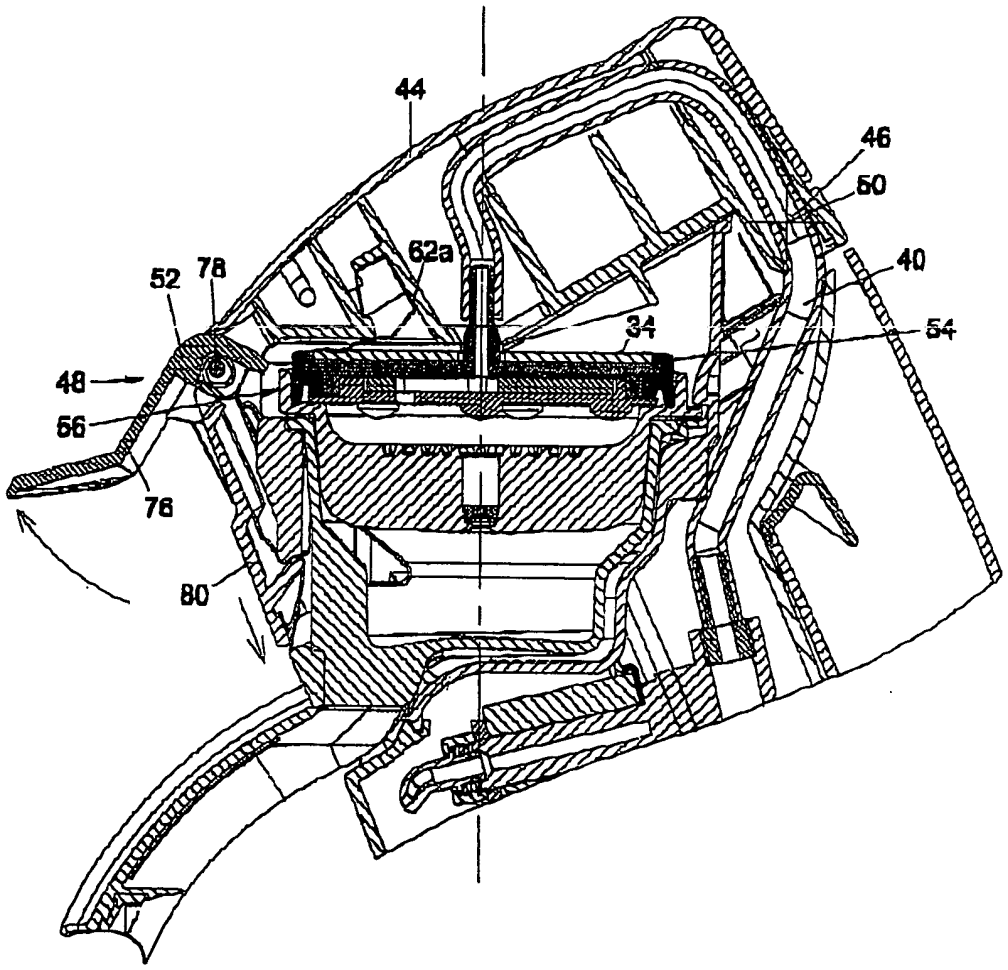

Fig. 2

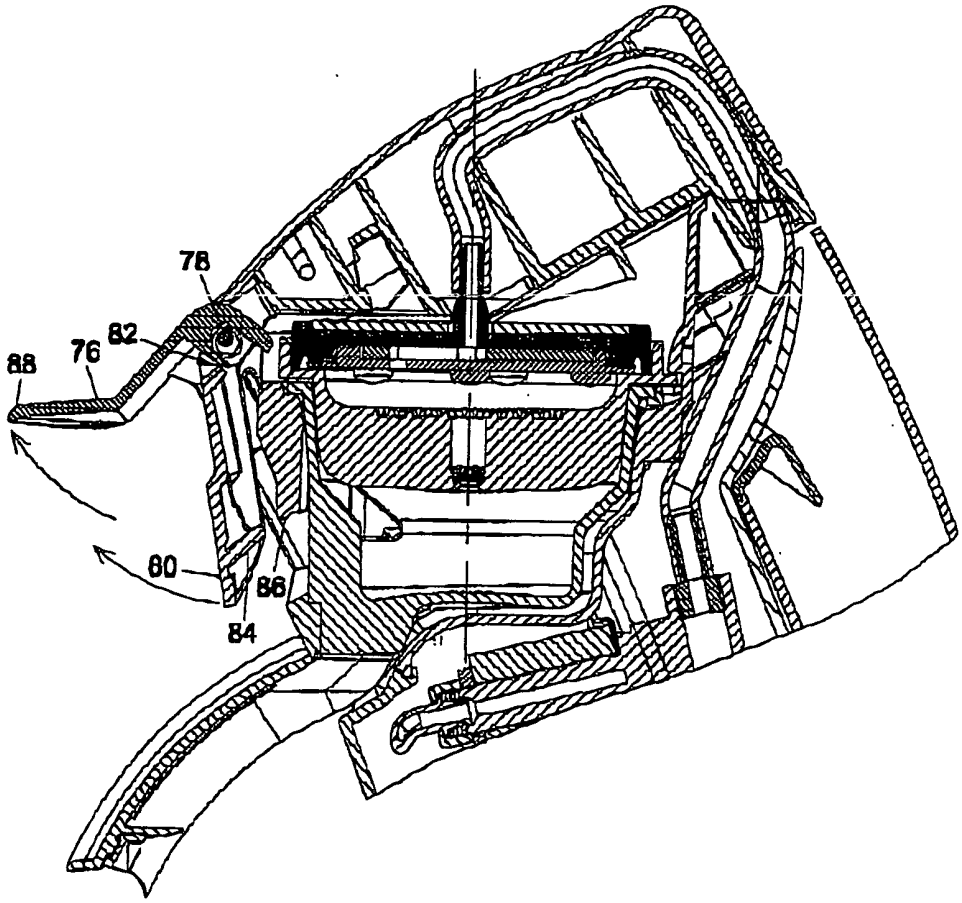

Fig. 3

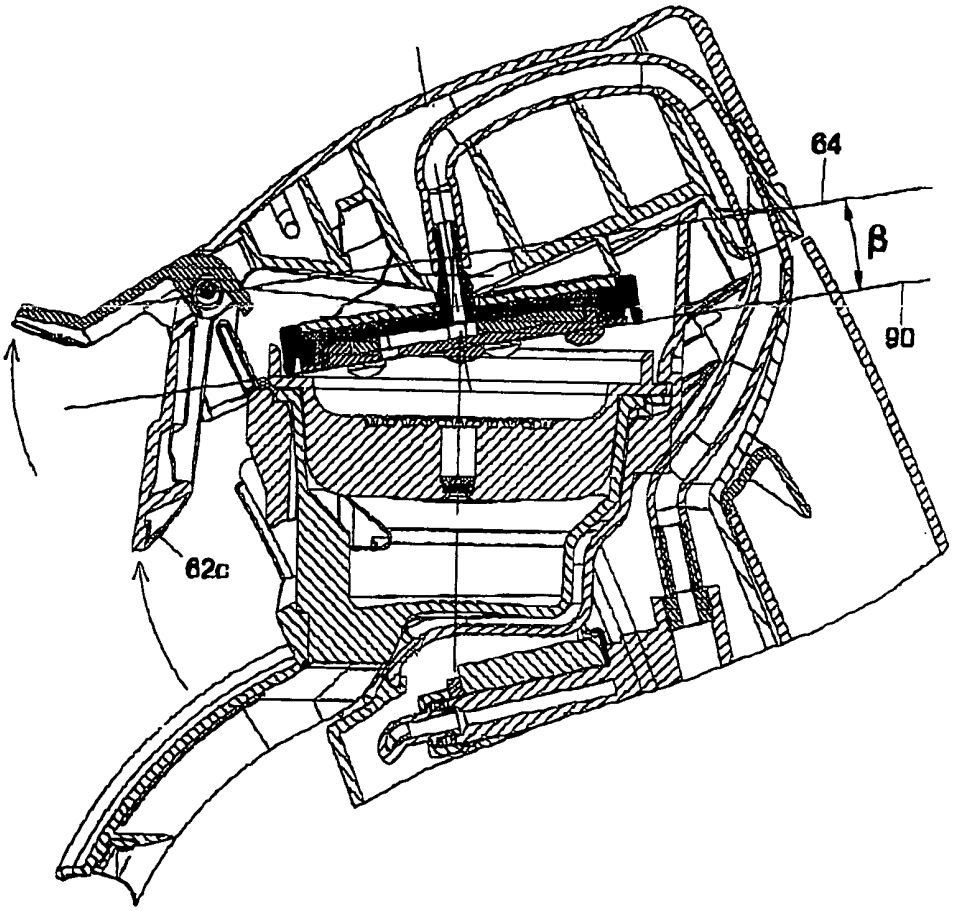

Fig. 4

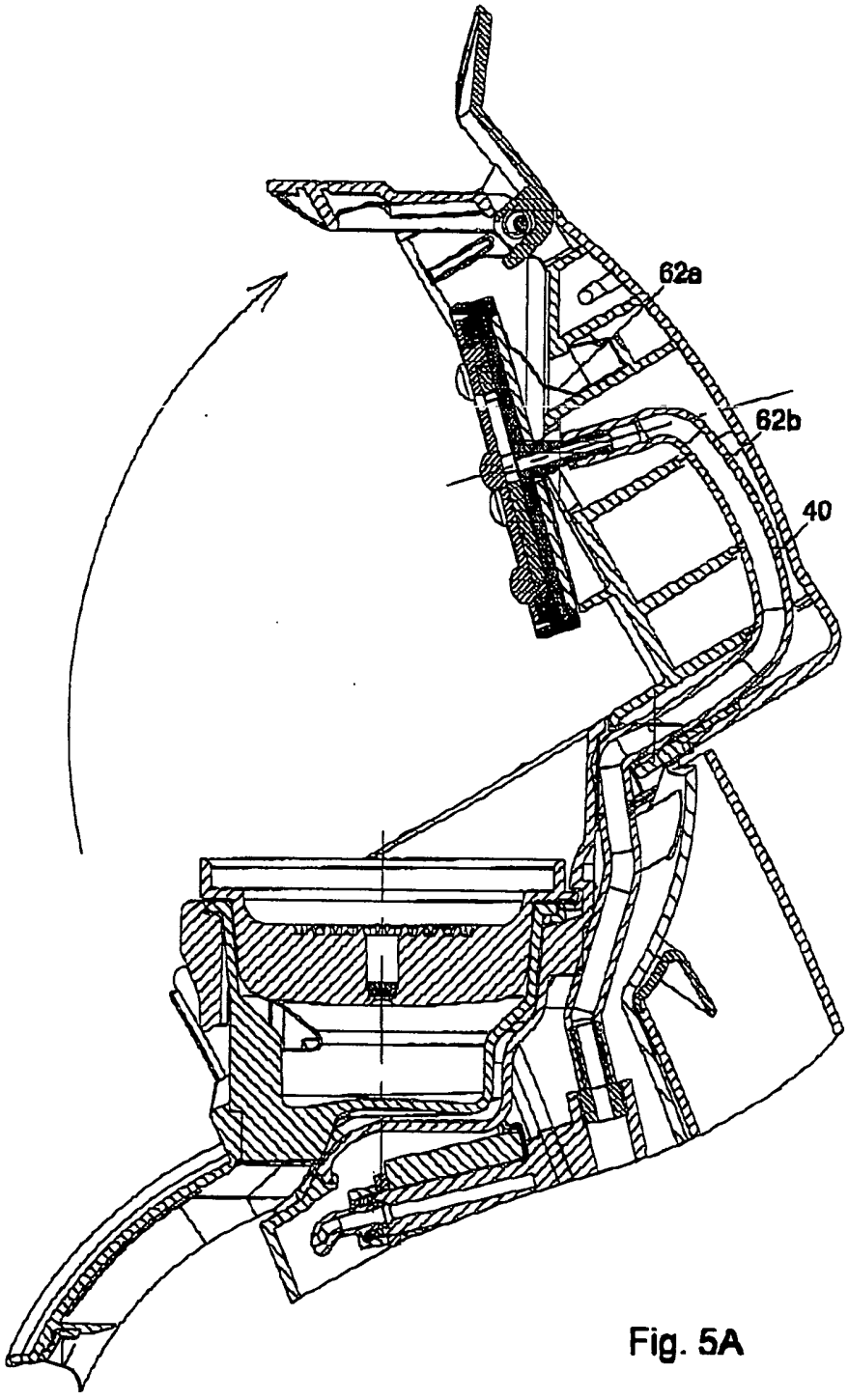

Fig. 5A

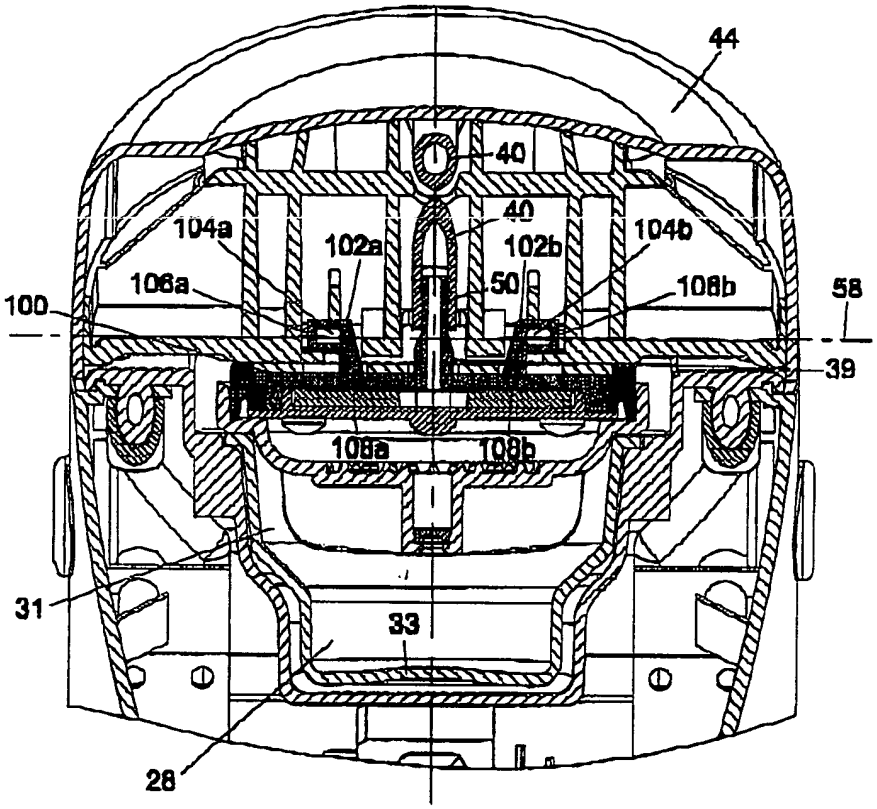
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Fig. 5B

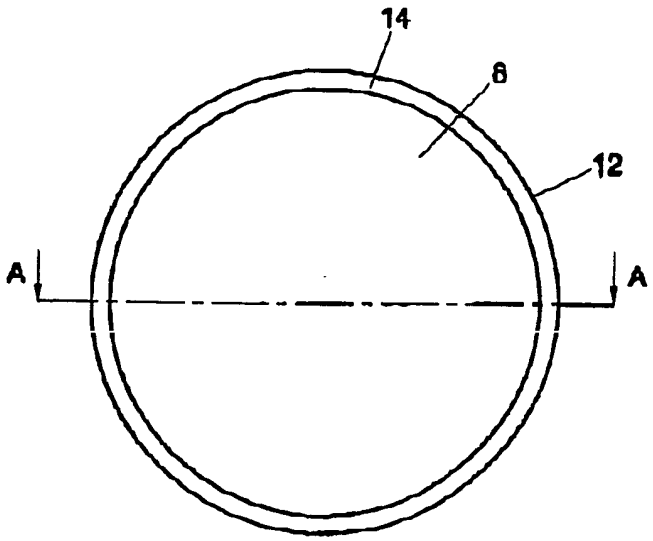

Fig. 6A

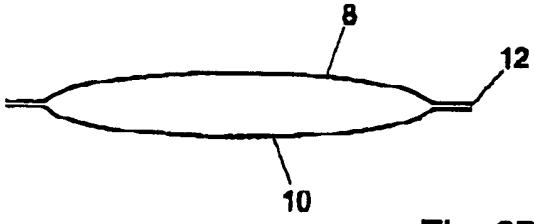

Fig. 6B

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

RECORD COPY

For receiving Office use only

International Application No. PCT/NL 00/00556

International Filing Date 08 AUG 2000 (08.08.00)

BUREAU VOOR DE INDUSTRIËLE EIGENDOM
P.C.T. INTERNATIONAL APPLICATION
Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum) P50415PC00

Box No. I TITLE OF INVENTION

Apparatus for preparing coffee

Box No. II APPLICANT

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

Sara Lee/DE N.V.
Keulsekade 143
3532 AA Utrecht
The Netherlands

☐ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State *(that is, country)* of nationality: NL

State *(that is, country)* of residence: NL

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

Kraan, Diederik
Trommelaarshoeve 145
7326 VT Apeldoorn
The Netherlands

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is,country)* of nationality: NL

State *(that is, country)* of residence: NL

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Mr Ir A.W. Prins, c.s.

c/o VEREENIGDE
Nieuwe Parklaan 97
2587 BN The Hague
The Netherlands

Telephone No. 070-4166711

Facsimile No. 070-4166799

Teleprinter No.

☐ **Adress for correspondence:** Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) *(mark the applicable check-boxes; at least one must be marked)*:

Regional Patent

☒ **AP** **ARIPO Patent:** **GH** Ghana, **GM** Gambia, **KE** Kenya, **LS** Lesotho, **MW** Malawi, **MZ** Mozambique, **SD** Sudan, **SL** Sierra Leone, **SZ** Swaziland, **TZ** United Republic of Tanzania, **UG** Uganda, **ZW** Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT

☒ **EA** **Eurasian Patent:** **AM** Armenia, **AZ** Azerbaijan, **BY** Belarus, **KG** Kyrgyzstan, **KZ** Kazakhstan, **MD** Republic of Mold va, **RU** Russian Federati n, **TJ** Tajikistan, **TM** Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT

☒ **EP** **European Patent:** **AT** Austria, **BE** Belgium, **CH and LI** Switzerland and Liechtenstein, **CY** Cyprus, **DE** Germany, **DK** Denmark, **ES** Spain, **FI** Finland, **FR** France, **GB** United Kingdom, **GR** Greece, **IE** Ireland, **IT** Italy, **LU** Luxembourg, **MC** Monaco, **NL** Netherlands, **PT** Portugal, **SE** Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT

☒ **OA** **OAPI Patent:** **BF** Burkina Faso, **BJ** Benin, **CF** Central African Republic, **CG** Congo, **CI** Côte d'Ivoire, **CM** Cameroon, **GA** Gabon, **GN** Guinea, **GW** Guinea-Bissau, **ML** Mali, **MR** Mauritania, **NE** Niger, **SN** Senegal, **TD** Chad, **TG** Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT *(if other kind of protection or treatment desired, specify on dotted line)* .....

National Patent *(if other kind of protection or treatment desired, specify on dotted line)*:

☒ **AE** United Arab Emirates
☒ **AG** Antigua and Barbuda
☒ **AL** Albania .....
☒ **AM** Armenia .....
☒ **AT** Austria .....
☒ **AU** Australia .....
☒ **AZ** Azerbaijan
☒ **BA** Bosnia and Herzegovina .....
☒ **BB** Barbados
☒ **BG** Bulgaria .....
☒ **BR** Brazil .....
☒ **BY** Belarus .....
☒ **BZ** Belize
☒ **CA** Canada
☒ **CH and LI** Switzerland and Liechtenstein
☒ **CN** China .....
☒ **CR** Costa Rica .....
☒ **CU** Cuba .....
☒ **CZ** Czech Republic .....
☒ **DE** Germany .....
☒ **DK** Denmark .....
☒ **DM** Dominica
☒ **DZ** Algeria .....
☒ **EE** Estonia .....
☒ **ES** Spain .....
☒ **FI** Finland .....
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☒ **JP** Japan .....
☒ **KE** Kenya .....
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☒ **KP** Democratic People's Republic of Korea .....
☒ **KR** Republic of Korea .....
☒ **KZ** Kazakhstan .....
☒ **LC** Saint Lucia
☒ **LK** Sri Lanka
☒ **LR** Liberia
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☒ **LT** Lithuania
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☒ **LV** Latvia
☒ **MA** Morocco .....
☒ **MD** Republic of Moldova .....
☒ **MG** Madagascar .....
☒ **MK** The former Yugoslav Republic of Macedonia .....
☒ **MN** Mongolia
☒ **MW** Malawi .....
☒ **MX** Mexico .....
☒ **MZ** Mozambique
☒ **NO** Norway
☒ **NZ** New Zealand .....
☒ **PL** Poland .....
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☒ **RO** Romania
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☒ **SD** Sudan
☒ **SE** Sweden
☒ **SG** Singapore
☒ **SI** Slovenia .....
☒ **SK** Slovakia .....
☒ **SL** Sierra Leone .....
☒ **TJ** Tajikistan .....
☒ **TM** Turkmenistan .....
☒ **TR** Turkey .....
☒ **TT** Trinidad and Tobago .....
☒ **TZ** United Republic of Tanzania
☒ **UA** Ukraine .....
☒ **UG** Uganda .....
☒ **US** United States of America .....
☒ **UZ** Uzbekistan .....
☒ **VN** Viet Nam .....
☒ **YU** Yugoslavia .....
☒ **ZA** South Africa .....
☒ **ZW** Zimbabwe .....

Check-box reserved for designating States which have become party to the PCT after issuance of this sheet:

☐ .....

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. *(Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)*

Box No. VI PRIORITY CLAIM ☐ Further priority claims are indicated in the Supplemental Box.

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is: national application: country	regional application:* regional Office	international application: receiving Office
item (1) 17 August 1999 (17.08.99)	1012847	NL		-
item (2)				-
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) *(only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office)* identified above as item(s) 1

* *Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.*

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) *(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):* ISA / EP

Request to use results of earlier search; reference to that search *(if an earlier search has been carried out by or requested from the International Searching Authority):*

Date (day/month/year)	Number	Country (or regional Office)
13 April 2000	SN 33938 NL	NL

Box No. VIII CHECK LIST; LANGUAGE OF FILING

This international application contains the following **number of sheets**:

request	: 3
description (excluding sequence listing part)	: 12
claims	: 4
abstract	: 1
drawings	: 7
sequence listing part of description	:
Total number of sheets	: 27

This international application is **accompanied by** the item(s) marked below:

1. ☒ fee calculation sheet
2. ☐ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(s):
6. ☐ translation of international application into (language):
7. ☐ separate indications concerning deposited microorganism or other biological materia
8. ☐ nucleotide and/or amino acid sequence listing in computer readable form
9. ☐ other *(specify)*:

Figure of the drawings which should accompany the abstract:

Language of filing of the international application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

J. H. F. Winckels

For receiving Office use only

1. Date of actual receipt of the purported international application:	08 AUG 2000 (08.08.00)
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority (if two or more are competent): ISA /	6. ☐ Transmittal of search copy delayed until search fee is paid.

2. Drawings: ☒ received: ☐ not received:

For International Bureau use only

Date of receipt of the record copy by the International Bureau: 31 AUGUST 2000 (31.08.00)

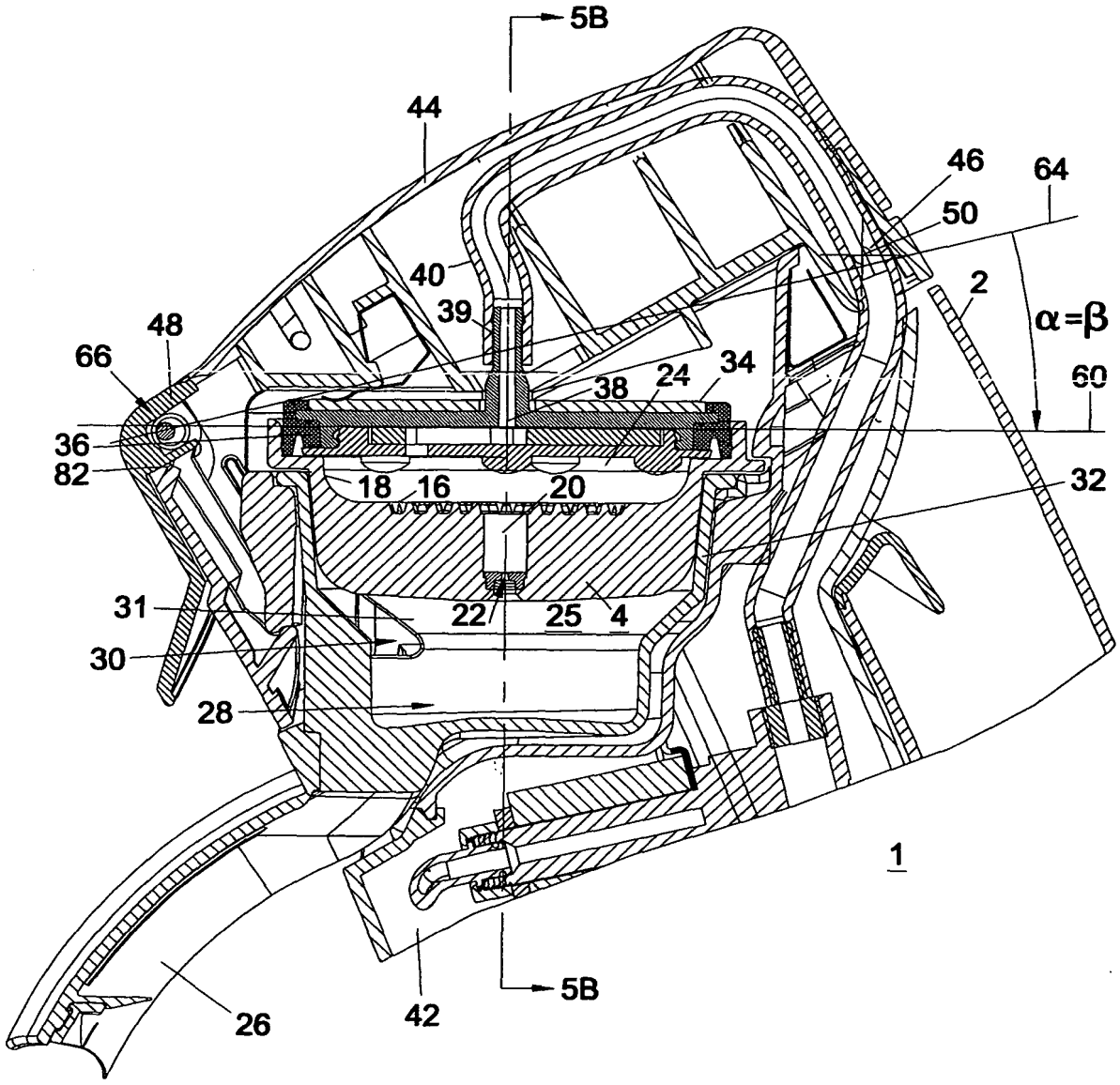
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Fig. 1

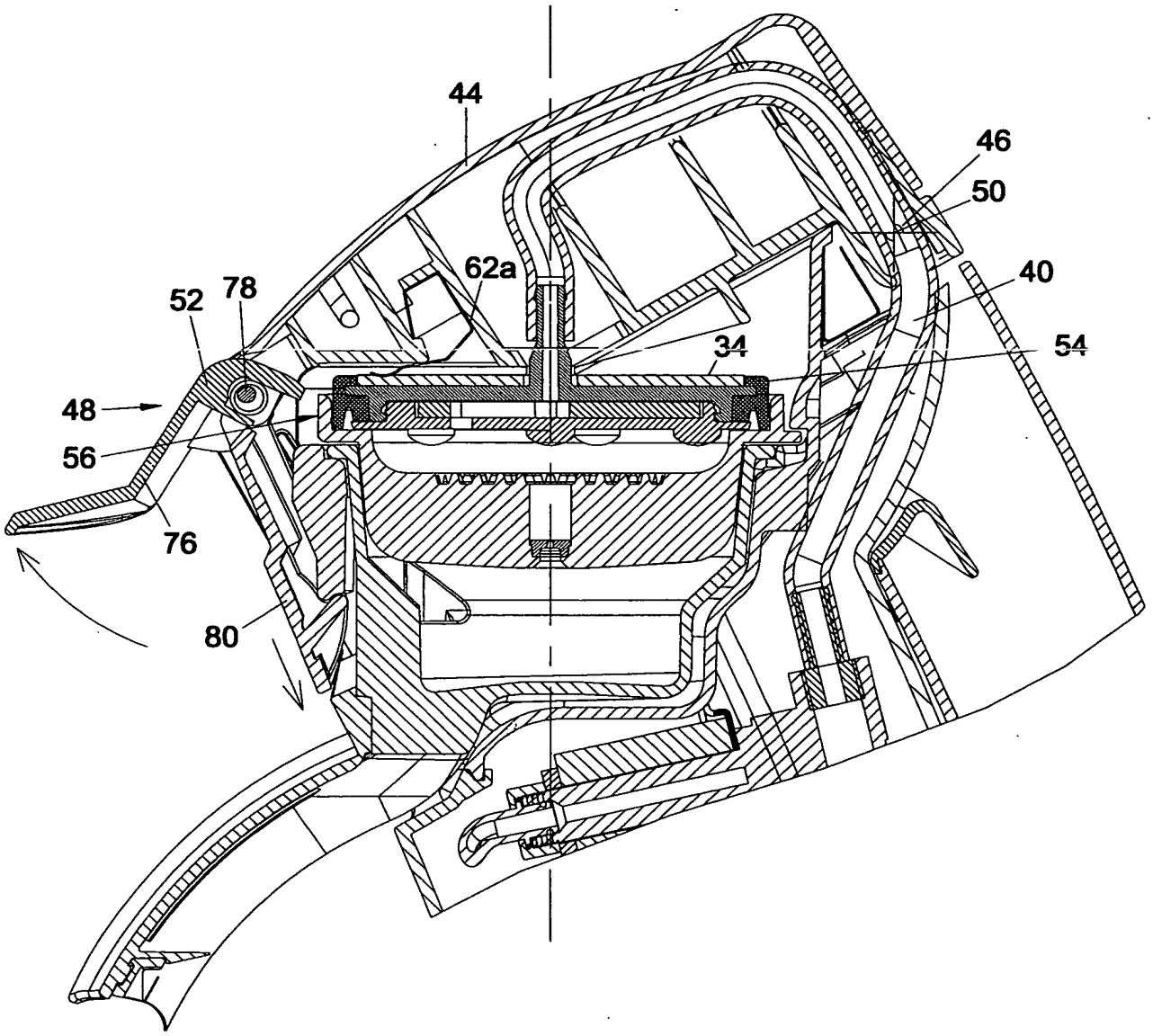

Fig. 2

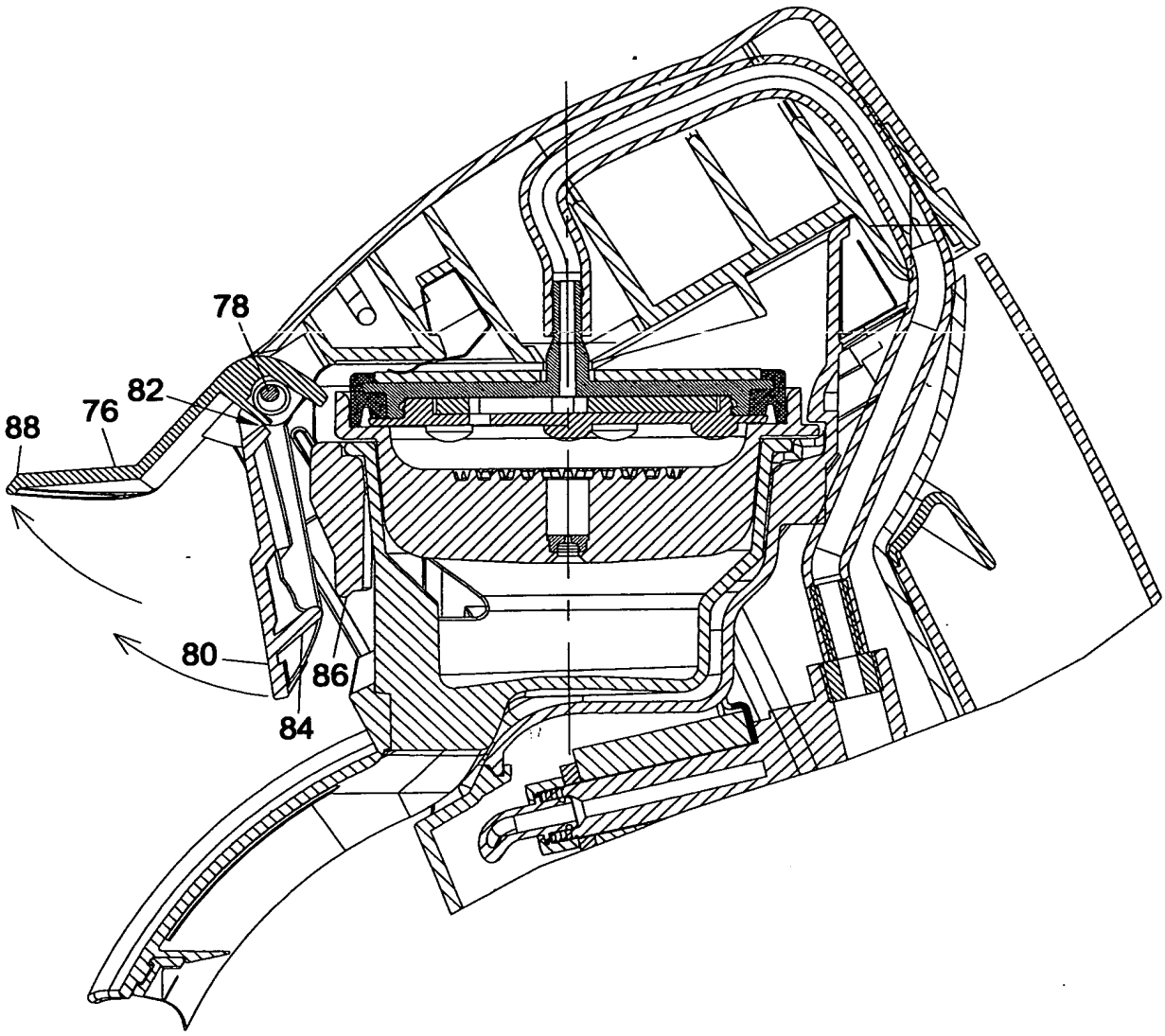

Fig. 3

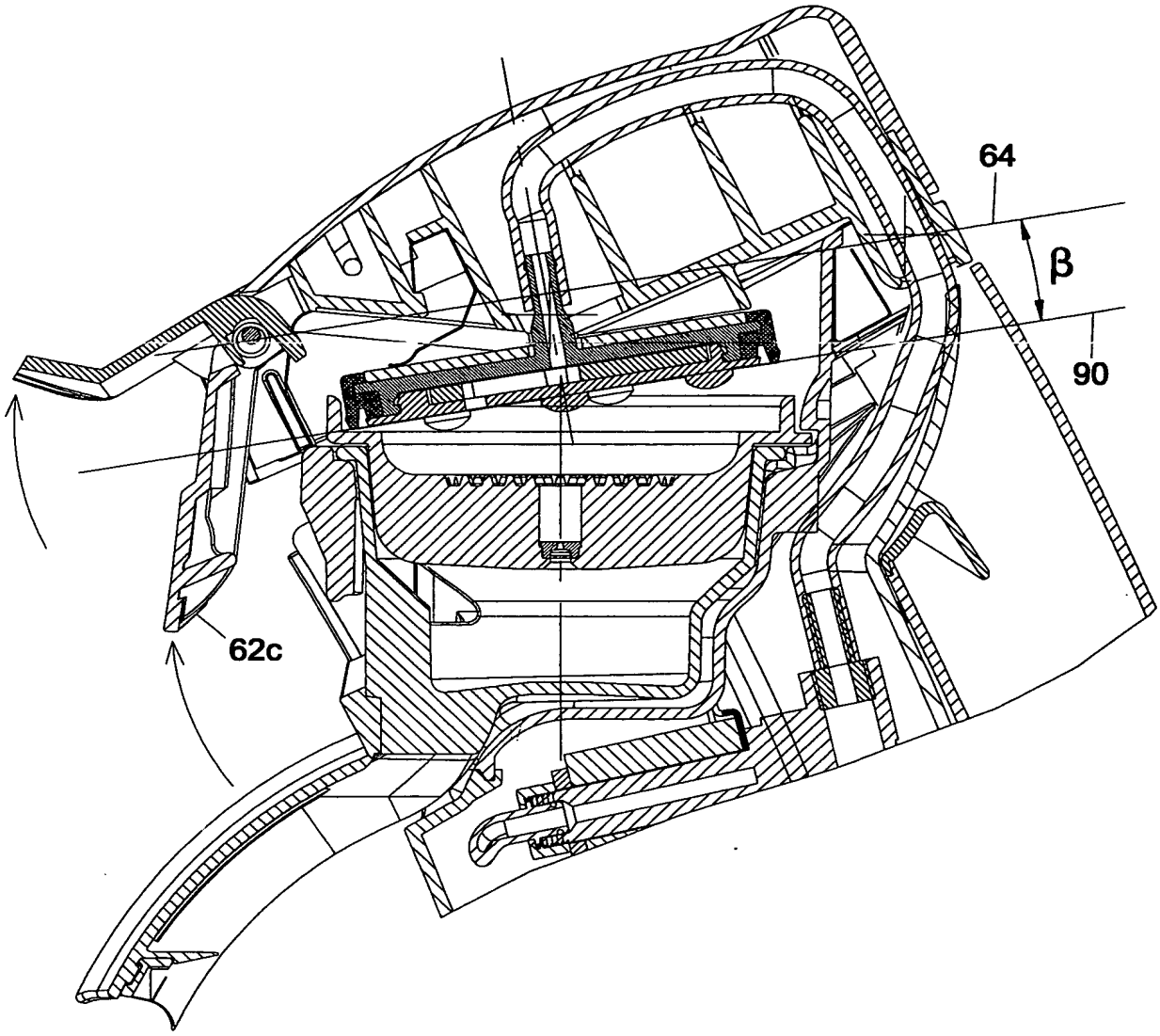

Fig. 4

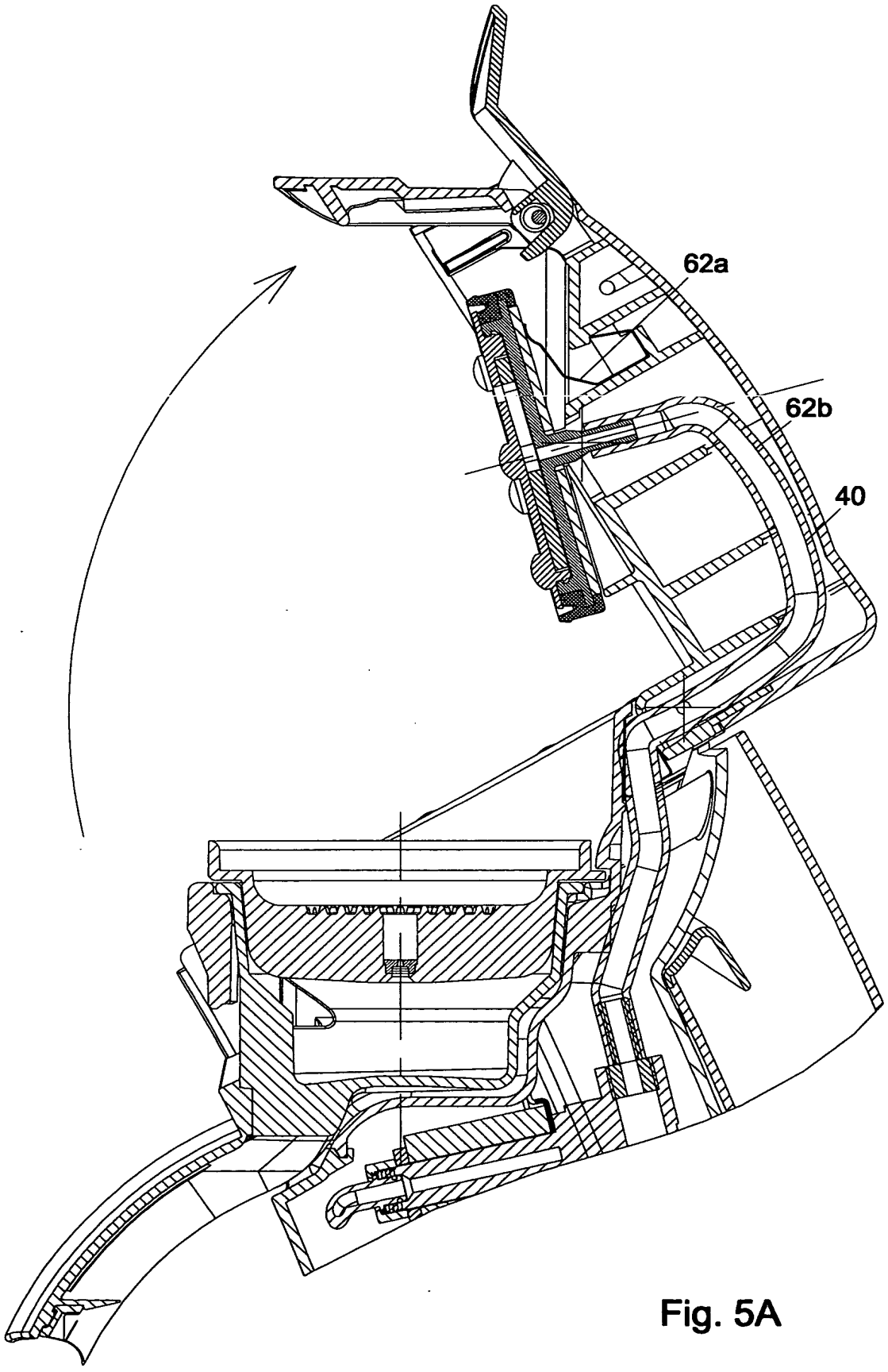

Fig. 5A

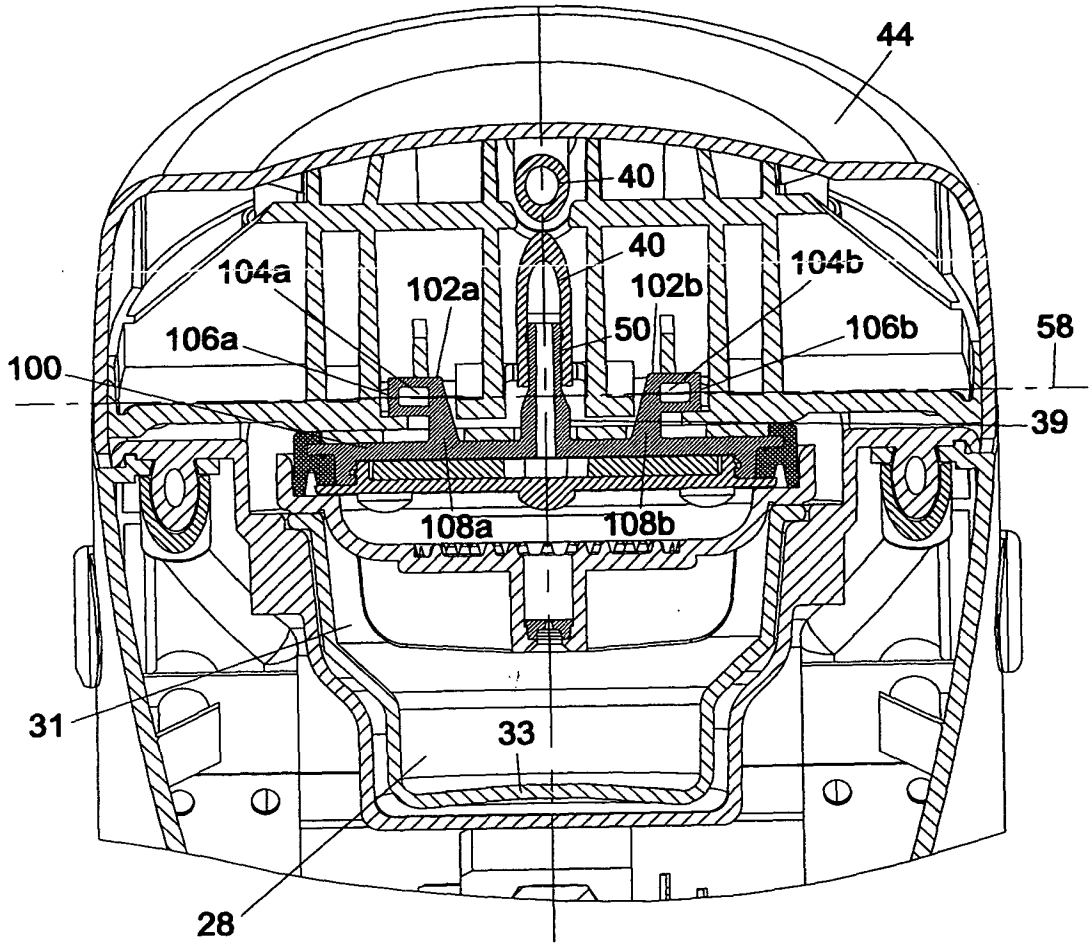
44
40
40
104a
102a
102b
104b
106a
50
106b
58
100
39
108a
108b
31
33
28

Fig. 5B

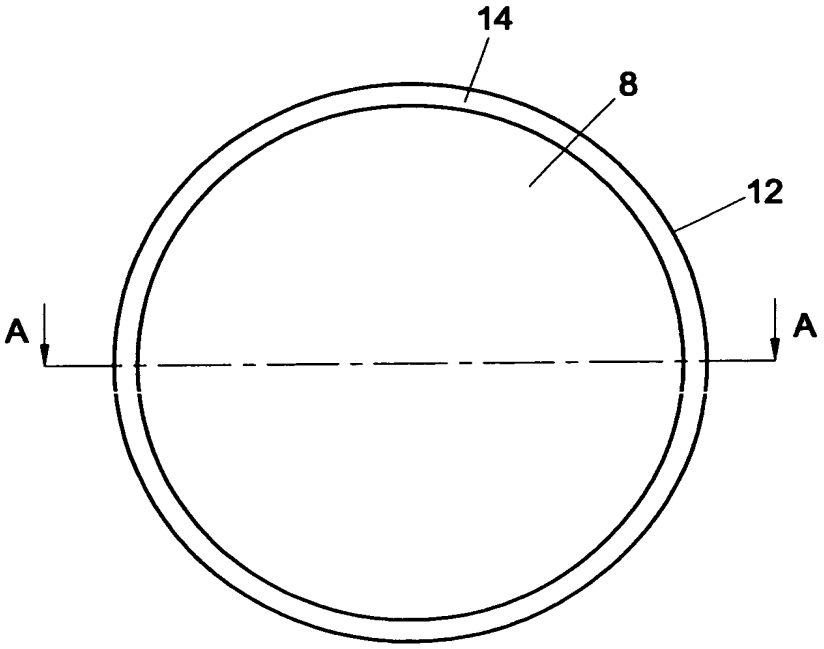

Fig. 6A

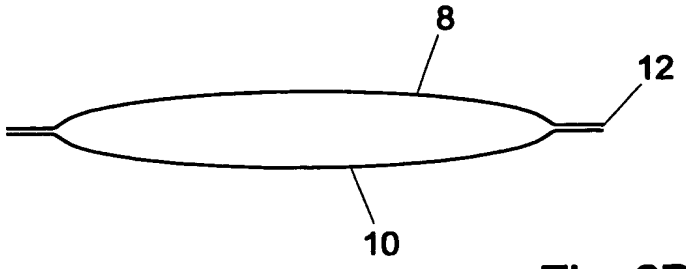

Fig. 6B

P50415PC00

Titel: Inrichting voor het bereiden van koffie.

De uitvinding heeft betrekking op een inrichting voor het bereiden van koffie voorzien van een houder die is ingericht voor het opnemen van een uit filtermateriaal vervaardigde en met een te extraheren product gevulde pouch waarbij de houder is voorzien van tenminste een uitstroomopening en een toegangsopening voor het plaatsen van de pouch in de houder en waarbij de inrichting verder is voorzien van een deksel voor het afsluiten en weer vrijgeven van de toegangsopening en klemmiddelen voor het naar elkaar toe drukken van de houder en de deksel wanneer de deksel de toegangsopening van de houder afsluit.

Een dergelijke inrichting is bekend uit de internationale octrooiaanvrage WO 94/02059. Hierbij is de inrichting, zoals in figuur 11 is getoond voorzien van klemmiddelen die aangrijpen op een omtreksrand van de deksel voor het naar elkaar toedrukken van de deksel en de houder wanneer de deksel de houder afsluit. Een nadeel van de bekende inrichting is dat bij het veelvuldig openen en sluiten van de houder de betrouwbaarheid van de vloeistofafdichting tussen de deksel en de houder afneemt. Wanneer in gebruik onder hoge druk heet water aan de houder wordt toegevoerd voor het bereiden van koffie, kan het derhalve voorkomen dat water uit de houder weglekt. Dit wordt veroorzaakt doordat de deksel en de houder niet goed sluiten. Wanneer het water weglekt, al is het slechts in geringe mate, daalt de druk in de houder. Wanneer de druk in de houder daalt, heeft dit tot gevolg dat de kwaliteit van het verkregen koffie-extract afneemt. In het bijzonder is hiervan sprake wanneer de uitstroomopening een dusdanige kleine diameter heeft dat het koffie-extract uit de uitstroomopening spuit voor het verkrijgen van koffie met een kleinbellige schuimlaag (café-crème). Wanneer de druk echter daalt, kan het voorkomen dat de snelheid waarmee van

het koffie-extract uit de uitstroomopening spuit niet voldoende is voor het bereiden van café-crème.

De uitvinding beoogt een inrichting te verschaffen die een oplossing biedt voor het hierboven gestelde probleem. Hierbij dient de constructie dermate betrouwbaar te zijn dat ook nadat de houder veelvuldig is gesloten en weer geopend een nog steeds betrouwbare afdichting tussen deksel en houder kan worden verkregen.

De inrichting overeenkomstig de uitvinding heeft hiertoe als kenmerk dat de klemmiddelen voor het naar elkaar toedrukken van de deksel en de houder wanneer de deksel de toegangsopening van de houder afsluit aangrijpen op tenminste twee van elkaar verschillende aangrijpposities gelegen op een buitenoppervlak van de deksel, waarbij de deksel verder is voorzien van een aan het buitenoppervlak van de deksel gelegen aansluiting voor de toevoer van water aan de houder, waarbij de twee van elkaar verschillende aangrijpposities elk niet samenvallen met de positie aan het buitenoppervlak, waar zich de aansluiting bevindt en waarbij de deksel over een beperkte hoek roteerbaar rond een aangrijprotatie-as met de klemmiddelen is verbonden, welke aangrijprotatie-as zich uitstrekt langs de twee van elkaar verschillende aangrijpposities. Doordat de klemmiddelen aangrijpen op tenminste twee van elkaar verschillende aangrijpposities gelegen op een buitenoppervlak van de deksel, is bereikt dat de aangrijpposities elk niet behoeven samen te vallen met de positie op het buitenoppervlak waar zich de aansluiting bevindt en dat bovendien de deksel over een beperkte hoek roteerbaar rond de aangrijprotatie-as met de klemmiddelen kan worden verbonden, welke aangrijprotatie-as zich uitstrekt door de twee van elkaar verschillende aangrijpposities. De aangrijpposities kunnen dan worden benut voor het beweeglijk met elkaar verbinden van de deksel en de klemmiddelen en kunnen bovendien worden benut voor het naar elkaar toedrukken van de deksel en de houder, wanneer de deksel de toegangsopening van de houder dient af te sluiten. Bij voorkeur geldt derhalve dat de deksel bij de

twee aangrijppositities beweeglijk met de klemmiddelen is verbonden. In het bijzonder geldt dat de aansluiting zich ongeveer in het midden van het buitenoppervlak van de deksel bevindt. Op deze wijze kan op een centrale positie water aan de houder worden toegevoerd. In het bijzonder geldt dat de aansluiting zich tevens ongeveer in het midden van de tenminste twee aangrijppositities bevindt. Er geldt dan dat de kracht die door de klemmiddelen op de aangrijppositities van de deksel wordt uitgeoefend wanneer de deksel de houder afsluit equivalent kan zijn met een kracht die door de klemmiddelen op de houder wordt uitgeoefend op een positie die samenvalt met het midden van de deksel, waar zich bij voorkeur de aansluiting bevindt.

Dit heeft tot gevolg dat altijd een goede vloeistofafdichting tussen de deksel en de houder wordt verkregen. In het bijzonder is hiertoe het buitenoppervlak althans in hoofdzaak cirkelvormig uitgevoerd.

Volgens een voorkeursuitvoeringsvorm van de inrichting is de inrichting verder voorzien van een behuizing waarmee de houder losmakelijk is verbonden, waarbij de klemmiddelen zijn voorzien van een rotatie-element met een eerste en tweede tegenover elkaar gelegen uiteinde, waarbij het rotatie-element nabij zijn eerste uiteinde roteerbaar rond een horizontaal gerichte eerste rotatie-as tussen een eerste en tweede rotatiepositie met de behuizing is verbonden voor het in de tweede rotatiepositie afsluiten van de toegangsopening van de houder en het in de eerste rotatiepositie weer vrijgeven van de toegangsopening, waarbij de inrichting verder is voorzien van een sluitinrichting voor het nabij het tweede uiteinde losmakelijk verbinden van het rotatie-element met de behuizing wanneer de deksel in de tweede rotatiepositie de toegangsopening afsluit waarbij de deksel dusdanig aan het rotatie-element is bevestigd dat in de tweede rotatiepositie de rotatie-as zich langs een eerste zijde van de deksel uitstrekt en het tweede uiteinde zich aan een tegenover de eerste zijde gelegen tweede zijde van de deksel bevindt.

Volgens een eerste nadere uitwerking van deze uitvoeringsvorm geldt dat de eerste rotatie-as zich boven een plat vlak door de toegangsopening van de houder bevindt. Een voordeel van deze uitvoeringsvorm is dat de behuizing relatief smal kan worden uitgevoerd. Hierbij kan de inrichting verder worden gekarakteriseerd in dat het door de eerste rotatie-as en het tweede uiteinde opgespannen vlak en het vlak door de opening een scherpe hoek insluiten wanneer de deksel de houder in de tweede rotatiepositie afsluit.

In het bijzonder is de deksel beweeglijk met het rotatie-element verbonden zodat de deksel bij het sluiten van de houder zich optimaal ten opzichte van de houder kan positioneren.

Volgens een nadere uitwerking geldt dat de aangrijp-rotatie-as althans nagenoeg evenwijdig loopt aan de eerste rotatie-as. Wanneer bij het sluiten van de deksel, een deel van de rand van de deksel de houder begint te raken, kan bij het verder roteren van het sluitelement rond de eerste rotatie-as de deksel tegelijkertijd over een beperkte hoek rond de aangrijprotatie-as roteren. Hiermee wordt gewaarborgd dat de deksel optimaal ten opzichte van de houder wordt gepositioneerd, dat wil zeggen, dat de deksel dusdanig wordt gepositioneerd dat deze de houder vloeistofdicht afsluit. Om te garanderen dat de deksel en de houder bij het sluiten van de houder elkaar in eerste instantie slechts op één punt raken, is de inrichting bij voorkeur verder voorzien van verende middelen die een dusdanige kracht op de deksel uitoefenen dat een onderzijde van de deksel ongeveer evenwijdig komt te liggen aan het door de eerste rotatie-as en het tweede uiteinde opgespannen vlak door rotatie van het rotatie-element rond de aangrijprotatie-as wanneer de deksel van de houder wordt gelicht door rotatie van het rotatie-element rond de eerste rotatie-as.

Volgens een zeer voordelige uitvoeringsvorm zijn de verende middelen voorzien van een flexibele slang die is bevestigd aan de deksel voor het toevoeren van heet water

aan de houder. De flexibele slang heeft dan een dubbel functie.

De uitvinding zal nader worden toegelicht aan de hand van de tekening. Hierin toont:

Figuur 1 een dwarsdoorsnede van een eerste uitvoeringsvorm van een inrichting overeenkomstig de uitvinding waarbij een houder is afgesloten door een deksel;

figuur 2 een dwarsdoorsnede van de inrichting volgens figuur 1 waarbij een eerste stap is gezet voor het openen van de houder;

figuur 3 een dwarsdoorsnede van de inrichting volgens figuur 1 waarbij een tweede stap is gezet voor het openen van de houder;

figuur 4 een dwarsdoorsnede van de inrichting volgens figuur 1 waarbij een derde stap is gezet voor het openen van de houder;

figuur 5a een dwarsdoorsnede van de inrichting volgens figuur 1 waarbij een vierde en laatste stap is gezet voor het openen van de houder;

figuur 5b een vooraanzicht van de inrichting van figuur 1 in de toestand volgens figuur 5a;

figuur 6a een bovenaanzicht van een pouch die in de inrichting volgens figuur 1 kan worden toegepast; en

figuur 6b een dwarsdoorsnede volgens het vlak A-A van figuur 6a.

Aan de hand van de figuren 1-5b zal thans een eerste uitvoeringsvorm van een inrichting volgens de uitvinding worden besproken.

De inrichting 1 voor het bereiden van koffie is voorzien van een behuizing 2 die een losmakelijk met de behuizing verbonden houder 4 omvat. De houder 4 is ingericht voor het opnemen van een uit filtermateriaal vervaardigde en een met een te extraheren product zoals gemalen koffie gevulde pouch 6, zoals getoond in de figuren 6a en 6b.

De pouch 6 bestaat in dit voorbeeld uit een bovenvel 8 en een benedenvel 10 die elk van filtreerpapier zijn vervaardigd. Het bovenvel 8 en het benedenvel 10 zijn elk

schijfvormig uitgevoerd en nabij hun langsranden 12 met elkaar verbonden. Genoemde verbinding vormt een rondlopende in zichzelf gesloten sealnaad 14. De houder 4 is komvormig uitgevoerd en bestaat uit een bodem 16 en een met de bodem verbonden opstaande, rondlopende zijwand 18. In de bodem 16 is een verdieping 20 aanwezig die is voorzien van tenminste één uitstroomopening 22. Aan zijn bovenzijde is de houder voorzien van een toegangsopening 24.

De behuizing 2 omvat voorts een vloeistofopvangruimte 25 die een uitstroomopening 26 omvat. In de vloeistofopvangruimte 25 is een komvormig uitgevoerd opvangreservoir 28 aanwezig (van de soort zoals omschreven in de Nederlandse octrooiaanvrage nr. 10.06039). In een zijwand 31 van het opvangreservoir 28 zijn uitstroomopeningen 30 aangebracht. Een bodem 33 van het opvangreservoir is van bovenaf gezien in hoofdzaak bolvormig uitgevoerd. De vloeistofopvangruimte 25 wordt in dit voorbeeld gevormd door een aan zijn bovenzijde open komvormig element 32, dat aan zijn bovenzijde dusdanig is uitgevoerd dat de houder 4 hierop losmakelijk kan worden geplaatst.

De inrichting is verder voorzien van een deksel 34 voor het afsluiten en weer vrijgeven van de toegangsopening 24 van de houder. De deksel 34 is aan zijn onderzijde voorzien van een afdichtingsring 36 die in gebruik kan samenwerken met de houder 4. De deksel is aan zijn bovenzijde voorzien van een aansluiting omvattende een instroomopening 38 en een buisje dat via een vloeistofleiding 40 met een inrichting 42 voor het verwarmen van heet water is verbonden. De inrichting 42 is van een op zich bekend type, zoals bijvoorbeeld een heetwaterkoker, zodat een nadere toelichting op dit punt achterwege kan worden gelaten.

De inrichting omvat voorts een rotatie-element 44 met een eerste 46 en tweede 48 uiteinde die tegenover elkaar zijn gelegen. Het rotatie-element is nabij zijn eerste uiteinde 46 roteerbaar rond een horizontaal gerichte eerste rotatie-as 50 met de behuizing 2 verbonden. Hierbij kan het rotatie-element rond de eerste rotatie-as 50 roteren tussen

een eerste (zie figuur 5) en tweede (zie figuur 1) rotatiepositie. Wanneer het rotatie-element 44 zich in de eerste rotatiepositie bevindt, wordt de toegangsopening 24 van de houder 4 vrijgegeven (zie figuur 5a). Wanneer daarentegen het rotatie-element zich in de tweede rotatiepositie bevindt, wordt de houder afgesloten, dat wil zeggen, wordt de toegangsopening 24 door de deksel 34 afgesloten (zie figuur 1).

De inrichting is verder voorzien van een sluitinrichting 52 voor het nabij het tweede uiteinde 48 van het rotatie-element 44 losmakelijk verbinden van het rotatie-element met de behuizing 2 wanneer de deksel 34 in de tweede rotatie-positie de toegangsopening 24 afsluit (zie ook figuur 1).

Zoals in figuur 1 goed te zien is, is de deksel 34 dusdanig aan het rotatie-element 44 bevestigd dat in de tweede rotatiepositie de rotatie-as 50 zich langs een eerste zijde 54 van de deksel uitstrekt en het tweede uiteinde 48 zich aan een tegenover de eerste zijde gelegen tweede zijde 56 van de deksel bevindt (zie figuur 2).

De deksel 34 is beweeglijk met het rotatie-element 44 verbonden. Zoals goed te zien is in figuur 5b is de deksel 34 van zijn aan de bovenzijde van de deksel gelegen buiten-oppervlak 100 verbonden met twee opstaande armen 102a en 102b, die zich naar boven toe uitstrekken en elk een opening 104a respectievelijk 104b omvatten. Door elk van de opening 104a en 104b strekt zich een arm 106a, 106b van het rotatie-element 44 uit. Deze armen zijn veel dunner dan de openingen 104a en 104b. Dit heeft tot gevolg dat de deksel beweeglijk met het rotatie-element 44 is verbonden. Voorts is het zo dat de deksel over een beperkte hoek roteerbaar rond een aangrijprotatie-as 58 met het rotatie-element 44 is verbonden.

De opstaande armen 102a, 102b strekken zich vanaf posities van het buitenoppervlak 100 naar boven toe uit, welke posities hierna zullen worden aangeduid als twee van elkaar verschillende aangrijpposities 108a, 108b. Deze aangrijpposities bevinden zich derhalve aan de onderzijde

van de opstaande armen 102a en 102b. Uit de tekening blijkt dan dat de aansluiting 39 voor de toevoer van water aan de houder, zich op een dusdanige positie bevindt dat de twee van elkaar verschillende aangrijpposities elk niet samenvallen met de positie van het buitenoppervlak waar zich de aansluiting 39 bevindt. Voorts geldt dan dat het deksel over een beperkte hoek roteerbaar rond de aangrijprotatie-as 58 met de klemmiddelen, dat wil zeggen met het klemelement 44, dat de armen 106a, 106b omvat en de opstaande armen 102a, 102b, zijn verbonden welke aangrijprotatie-as 58 zich uitstrekt langs, dat wil zeggen in de nabijheid van de twee van elkaar verschillende aangrijpposities. Doordat de openingen 104a en 104b groter zijn dan een doorsnede van de armen 106a en 106b brengt dit met zich dat de deksel 34 behalve roteerbaar rond de aangrijpas 58 ook over een zekere afstand transleerbaar met het rotatie-element 44 is verbonden. De deksel is derhalve op de twee aangrijpposities 108a en 108b beweeglijk met het rotatie-element verbonden. De aansluiting 39 bevindt zich ongeveer in het midden van de aangrijpposities 108a en 108b. Voorts geldt dat de aansluiting 39 ongeveer in het midden ligt van het buitenoppervlak van de deksel 34. Het buitenoppervlak van het deksel 34 is in dit voorbeeld cirkelvormig uitgevoerd. Ook geldt dat in dit voorbeeld een lijn door de tenminste twee aangrijppunten 108a en 108b ongeveer evenwijdig is aan de eerste rotatie-as 50. Deze lijn valt ongeveer samen met de aangrijprotatie-as 58.

Karakteristiek voor de uitvoeringsvorm volgens de figuren 1-5b is dat de eerste rotatie-as 50 zich boven een plat vlak 60 door de toegangsopening 24 van de houder 4 bevindt (figuur 1). De eerste rotatie-as 50 is evenwijdig aan dit vlak 60. Voorts geldt dat de aangrijprotatie-as 58 althans nagenoeg evenwijdig aan de eerste rotatie-as 50 loopt. De deksel is aldus over een beperkte rotatiehoek roteerbaar rond de aangrijprotatie-as met het rotatie-element 44 verbonden.

Zoals in figuur 1 goed te zien is, geldt dat door het door de eerste rotatie-as 50 en het tweede uiteinde 48 opgespannen vlak 64 en het vlak 60 door de toegangsopening 24 een scherpe hoek α wordt ingesloten wanneer de deksel de houder in de tweede rotatiepositie afsluit. Een snijlijn 66 van beide laatstgenoemde vlakken bevindt zich nabij het tweede uiteinde 48.

De inrichting is voorts voorzien van verende middelen 62a en 62b die een dusdanige kracht op de deksel 34 uitoefenen dat de deksel rond de aangrijprotatie-as 58 roteert in een richting waarbij de hoek α kleiner wordt wanneer de deksel van houder wordt gelicht door rotatie van het rotatie-element 44 rond de eerste rotatie-as 50 (zie ook figuur 5a). In dit voorbeeld omvatten de verende middelen 62b onder meer de flexibele leiding 40.

De inrichting is verder voorzien van klemmiddelen voor het naar elkaar toedrukken van de houder en de deksel wanneer de deksel de toegangsopening van de houder afsluit.

De klemmiddelen grijpen wanneer de deksel zich in de tweede positie bevindt op tenminste twee van elkaar verschillend gelegen aangrijpposities 108a en 108b aan op het buitenoppervlak 100 van de deksel. De klemmiddelen omvatten in dit voorbeeld het rotatie-element 44 met de armen 106a, 106b en de opstaande armen 102a, 102b.

De werking van de inrichting in als volgt. Allereerst wordt de sluitinrichting 52 bediend zodat de deksel 34 van de houder 4 kan worden gelicht door middel van rotatie van het rotatie-element 44 rond de eerste rotatie-as 50. De hierbij ontstane situatie is getoond in figuur 5a. Vervolgens wordt de pouch 6, zoals getoond in de figuren 6a en 6b in de houder 4 geplaatst. De houder 4 kan hiertoe uit de behuizing 2 worden genomen, waarna de houder 4 tezamen met de pouch 6 in de behuizing 2 wordt teruggeplaatst. Hierna kan de deksel worden gesloten door het eerste uiteinde 46 van het rotatie-element 44 naar beneden te bewegen. Hierbij roteert het rotatie-element 44 rond de eerste rotatie-as 50. De verende middelen 62a, 62b

bewerkstelligen dat een dusdanige kracht op de deksel wordt uitgeoefend dat een onderzijde van de deksel ongeveer evenwijdig komt te liggen aan het door de eerste rotatie-as en het tweede uiteinde opgespannen vlak door rotatie van het rotatie-element rond de aangrijprotatie-as wanneer de deksel van de houder wordt gelicht door rotatie van het rotatie-element rond de eerste rotatie-as. Dit brengt met zich dat bij het sluiten de tweede zijde 56 van de deksel allereerst de houder 4 raakt. Op dat moment drukken de armen 106a, 106b van het klemelement 44 nog niet op de armen 102a, 102b van de deksel. Wanneer vervolgens het tweede uiteinde 48 verder naar beneden wordt bewogen, zal langzamerhand de eerste zijde 54 van de deksel in de richting van de houder 4 worden bewogen. Hierbij zal de hoek β tussen het vlak 64 en het vlak 90 door de onderzijde van de deksel 34 toenemen van ongeveer 0 graden (fig. 4) tot aan de waarde van α (in fig. 1). Ten gevolge van deze beweging is bewerkstelligd dat de deksel 34 symmetrisch op de houder 4 wordt geplaatst. Deze situatie is getoond in figuur 3.

Vervolgens wordt de sluitinrichting 52 bediend, met als gevolg dat het tweede uiteinde 48 van het rotatie-element 44 naar beneden wordt gedrukt. Hierdoor zullen de armen 106a, 106b in een verticaal naar beneden toe gerichte richting op de armen 102a, 102b drukken. Het gevolg is dat de deksel 34 op een positie die, effectief, ongeveer in het midden van het buitenoppervlak ligt van de deksel wordt aangedrukt. De kracht tussen de afdichtingsring 36 enerzijds en de houder 4 anderzijds zal dan op elk punt van de afdichtingsring ongeveer hetzelfde zijn. De vervorming van de afdichtingsring zal derhalve op elk punt van de afdichtingsring eveneens ongeveer hetzelfde zijn. Dit laatste heeft weer tot gevolg dat een optimaal en betrouwbare afdichting tussen deksel en houder is verkregen. Vervolgens wordt de sluitinrichting 52 verder bediend (zie figuren 1 en 2) voor het vergrendelen van het rotatie-element.

De sluitinrichting 52 is in dit voorbeeld voorzien van een bedieningslip 76 die nabij het tweede uiteinde 48 roteerbaar rond een rotatie-as 78 met het rotatie-element 44 is verbonden. Voorts omvat de sluitinrichting 52 een sluitlip 80 die roteerbaar rond een rotatie-as 82 met de bedieningslip 76 is verbonden. In de gesloten positie, zoals getoond in figuur 1 geldt dat de rotatie-as 82 onder de rotatie-as 78 ligt, waarbij bovendien geldt dat de afstand tussen de rotatie-as 78 en de houder 4 kleiner is dan de afstand tussen de rotatie-as 82 en de houder 4. Een vrij uiteinde 84 van de sluitlip 80 haakt in dit voorbeeld onder een uitsteeksel 86 van de behuizing 2. Wanneer de sluitinrichting 52 moet worden geopend, wordt een vrij uiteinde 88 van de bedieningslip 76 naar boven toe bewogen, zoals is getoond in figuur 2. Hierdoor zal het vrije uiteinde 84 van de sluitlip 80 naar beneden toe bewegen (zie figuur 2), zodat het vrije uiteinde 84 van het uitsteeksel 86 kan worden losgemaakt. Deze situatie is getoond in figuur 3. Een veer 62c zorgt ervoor dat het vrije uiteinde 84 in een van de behuizing 2 afgekeerde richting beweegt en aldus automatisch loskomt van het uitsteeksel 86. Deze situatie is tevens in figuur 3 getoond. Vervolgens wordt de bedieningslip 76 verder omhoog bewogen (zie figuur 4) waarbij dan de hoeken α en β kleiner worden. Hierna kan de deksel verder worden geopend, zoals getoond in de figuren 5a en 5b. Voor het sluiten van de deksel worden de stappen die aan de hand van de figuren 1-5b zijn besproken in tegengestelde richting doorlopen.

Opgemerkt wordt dat het voordeel van de hiervoor omschreven sluitinrichting 52 is dat het openen en het sluiten van de sluitinrichting met een zeer lichte bediening van de bedieningslip 76 kunnen worden uitgevoerd. Ten gevolge van het tijdelijk naar beneden toe wegen van de sluitlip 80, wanneer de bedieningslip 76 naar boven toe wordt bewogen (zie figuur 2) en het hiermee tegengestelde effect van het naar boven toe bewegen van de sluitlip 80 wanneer de bedieningslip 76 naar beneden toe wordt bewogen,

wordt bereikt dat in gesloten toestand, zoals getoond in figuur 1, een stabiele situatie is verkregen. Bovendien wordt door beweging van de bedieningslip van de in figuur 2 getoonde positie naar de in figuur 1 getoonde positie het rotatie-element 44 tegen de richting van de wijzers van de klok rond de rotatie-as 50 geroteerd, zodat de deksel 34 goed op de houder wordt gedrukt.

In de gesloten positie, zoals getoond in figuur 1 kan vervolgens heet water aan de leiding 40 worden toegevoerd. Dit heter water wordt via de deksel 34 aan de bovenzijde van de pouch 6 toegevoerd. Dit hete water doorloopt de pouch en verzamelt zich vervolgens als koffie-extract in de verdieping 20. Vervolgens spuit het koffie-extract door de uitspuitopening 22 in het opvangreservoir 28. Het opvangreservoir 28 wordt aldus gevuld met koffie-extract. Doordat het koffie-extract in de vloeistofspiegel van het opvangreservoir 28 spuit wordt een goede café-crème gevormd. Deze café-crème stroomt via de uitstroomopening 30 uit het opvangreservoir om via de uitloopopening 26 de behuizing te verlaten.

De uitvinding is geenszins beperkt tot de hiervoor omschreven uitvoeringsvormen. Zo zijn andere uitvoeringsvormen van de sluitinrichting 52 denkbaar. Ook kunnen de houder en deksel andere vormen aannemen dan getoond. De houder en de deksel kunnen bijvoorbeeld een vierkante in plaats van een ronde dwarsdoorsnede omvatten. Ook is het niet noodzakelijk dat gebruik wordt gemaakt van een opvangreservoir 28 zoals in de tekening getoond.

Dergelijke varianten worden geacht binnen het kader van de uitvinding te vallen.

CONCLUSIES

1. Inrichting voor het bereiden van koffie voorzien van een houder die is ingericht voor het opnemen van een uit filtermateriaal vervaardigde en met een te extraheren product gevulde pouch waarbij de houder is voorzien van tenminste een uitstroomopening en een toegangsopening voor het plaatsen van de pouch in de houder en waarbij de inrichting verder is voorzien van een deksel voor het afsluiten en weer vrijgeven van de toegangsopening en klemmiddelen voor het naar elkaar toe drukken van de houder en de deksel wanneer de deksel de toegangsopening van de houder afsluit, met het kenmerk, dat de klemmiddelen voor het naar elkaar toedrukken van de deksel en de houder, wanneer de deksel de toegangsopening van de houder afsluit, aangrijpen op tenminste twee van elkaar verschillende aangrijpposities gelegen op een buitenoppervlak van de deksel, waarbij de deksel verder is voorzien van een aan het buitenoppervlak van de deksel gelegen aansluiting voor de toevoer van water aan de houder, waarbij de twee van elkaar verschillende aangrijpposities elk niet samenvallen met de positie aan het buitenoppervlak, waar zich de aansluiting bevindt en waarbij de deksel over een beperkte hoek roteerbaar rond een aangrijprotatie-as met de klemmiddelen is verbonden, welke aangrijprotatie-as zich uitstrekt langs de twee van elkaar verschillende aangrijpposities.

2. Inrichting volgens conclusie 1, met het kenmerk, dat de deksel bij de twee aangrijpposities beweeglijk met de klemmiddelen zijn verbonden.

3. Inrichting volgens conclusie 1 of 2, met het kenmerk, dat de aansluiting ongeveer in het midden ligt van de tenminste twee aangrijpposities.

4. Inrichting volgens een der voorgaande conclusies, met het kenmerk, dat de aansluiting ongeveer in het midden ligt van het buitenoppervlak van de deksel.

5. Inrichting volgens een der voorgaande conclusies, met het kenmerk, dat het buitenoppervlak althans in hoofdzaak cirkelvormig is uitgevoerd.

6. Inrichting volgens een der voorgaande conclusies, met het kenmerk, dat de inrichting verder is voorzien van een behuizing waarmee de houder losmakelijk is verbonden, waarbij de klemmiddelen zijn voorzien van een rotatie-element met een eerste en tweede tegenover elkaar gelegen uiteinde waarbij het rotatie-element nabij zijn eerste uiteinde roteerbaar rond een horizontaal gerichte eerste rotatie-as tussen een eerste en tweede rotatiepositie met de behuizing is verbonden voor het in de tweede rotatiepositie afsluiten van de toegangsopening van de houder en het in de eerste rotatiepositie weer vrijgeven van de toegangsopening, waarbij de inrichting verder is voorzien van een sluitinrichting voor het nabij het tweede uiteinde losmakelijk verbinden van het rotatie-element met de behuizing wanneer de deksel in de tweede rotatiepositie de toegangsopening afsluit waarbij de deksel dusdanig aan het rotatie-element is bevestigd dat in de tweede rotatiepositie de rotatie-as zich langs een eerste zijde van de deksel uitstrekt en het tweede uiteinde zich aan een tegenover de eerste zijde gelegen tweede zijde van de deksel bevindt.

7. Inrichting volgens conclusie 6, met het kenmerk, dat een lijn door de tenminste twee aangrijppunten ongeveer evenwijdig is aan de eerste rotatie-as.

8. Inrichting volgens conclusie 6 of 7, met het kenmerk, dat de eerste rotatie-as zich boven een plat vlak door de toegangsopening van de houder bevindt.

9. Inrichting volgens conclusie 8, met het kenmerk, dat een onderzijde van de deksel althans in hoofdzaak beneden een door de eerste rotatie-as en het tweede uiteinde opgespannen vlak ligt wanneer de deksel de houder in de tweede rotatiepositie afsluit.

10. Inrichting volgens conclusie 9, met het kenmerk, dat de eerste rotatie as evenwijdig is aan het vlak door de opening.

11. Inrichting volgens conclusie 9 of 10, met het kenmerk, dat het door de eerste rotatie-as en het tweede uiteinde opgespannen vlak en het vlak door de opening een scherpe hoek in sluiten wanneer de deksel de houder in de tweede rotatiepositie afsluit.

12. Inrichting volgens conclusie 9, 10 of 11, met het kenmerk, dat het door de eerste rotatie-as en het tweede uiteinde opgespannen vlak en het vlak door de opening een snijlijn hebben die nabij het tweede uiteinde ligt wanneer de deksel de houder in de tweede rotatiepositie afsluit.

13. Inrichting volgens conclusie 12, met het kenmerk, dat de tweede aangrijprotatie-as met het rotatie-element is verbonden waarbij de aangrijprotatie-as althans nagenoeg evenwijdig loopt aan de eerste rotatie-as.

14. Inrichting volgens conclusie 13, met het kenmerk, dat de inrichting verder is voorzien van verende middelen die een dusdanige kracht op de deksel uitoefenen dat een onderzijde van de deksel ongeveer evenwijdig komt te liggen aan het door de eerste rotatie-as en het tweede uiteinde opgespannen vlak door rotatie van het rotatie-element rond de tweede aangrijprotatie-as wanneer de deksel van de houder wordt gelicht door rotatie van het rotatie-element rond de eerste rotatie-as.

15. Inrichting volgens conclusie 14, met het kenmerk, dat de verende middelen zijn voorzien van een flexibele slang die is bevestigd aan de deksel voor het toevoeren van heet water aan de houder.

16. Inrichting volgens conclusie 5, 6 of 7, met het kenmerk, dat de eerste rotatie-as zich althans nagenoeg in een plat vlak door de toegangsopening van de houder bevindt.

17. Inrichting volgens conclusie 16, met het kenmerk, dat een onderzijde van de deksel althans in hoofdzaak in een door de aangrijprotatie-as en het tweede uiteinde opgespannen vlak ligt wanneer de deksel de houder afsluit.

18. Inrichting volgens conclusie 17, met het kenmerk, dat de eerste rotatie-as evenwijdig is aan het vlak door de toegangsopening.

19. Inrichting volgens conclusie 17 of 18, met het kenmerk, dat het door de aangrijprotatie-as en het tweede uiteinde opgespannen vlak en het vlak door de opening althans nagenoeg evenwijdig aan elkaar verlopen wanneer de deksel de houder in de tweede rotatiepositie afsluit.

UITTREKSEL

De inrichting voor het bereiden van koffie is voorzien van een houder die is ingericht voor het opnemen van een uit filtermateriaal vervaardigde en met een te extraheren product gevulde pouch. De houder is voorzien van tenminste een uitstroomopening en een toegangsopening voor het plaatsen van de pouch in de houder. De inrichting is verder voorzien van een deksel voor het afsluiten en weer vrijgeven van de toegangsopening en klemmiddelen voor het naar elkaar toe drukken van de houder en de deksel wanneer de deksel de toegangsopening van de houder afsluit.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
P50415PC00		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/NL00/00556	08/08/2000	17/08/1999
International Patent Classification (IPC) or national classification and IPC A47J31/40		
Applicant SARA LEE/DE N.V. et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets. (15)

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
13/12/2000	27.12.2001
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Lehe, J Telephone No. +31 70 340 3108

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL00/00556

I. Basis of th report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

1-11	with telefax of	12/09/2001

Claims, No.:

3-5,7-19	as originally filed	
1,2,6	with telefax of	12/09/2001

Drawings, sheets:

1/7-7/7	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   - ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
   - ☐ the language of publication of the international application (under Rule 48.3(b)).
   - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   - ☐ contained in the international application in written form.
   - ☐ filed together with the international application in computer readable form.
   - ☐ furnished subsequently to this Authority in written form.
   - ☐ furnished subsequently to this Authority in computer readable form.
   - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-19
	No:	Claims	
Inventive step (IS)	Yes:	Claims	6-19
	No:	Claims	1-5
Industrial applicability (IA)	Yes:	Claims	1-19
	No:	Claims	

2. Citations and explanations
   see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re It m V

1. Reference is made to the following document:

D1: WO 94 02059 A (NESTLE SA ;FOND OLIVIER (CH); LAVANCHY GERARD (CH); PLEISCH JEAN P) 3 February 1994 (1994-02-03) cited in the application

2. The document D1 (Fig. 11) is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (note that rotation element (83) and cover (75) were read as two seperate pieces):
An apparatus for preparing coffee, comprising a holder (76) arranged for receiving a pouch made of filter material and filled with a product to be extracted, the holder comprising at least one outflow opening (21) and an access opening (78) for placing the pouch in the holder, the apparatus further comprising a cover (75) for closing and releasing the access opening and clamping means (73, 77) for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder, wherein the apparatus further comprises a housing (70) wherein the clamping means comprise a rotation element (element 83 is rotating) with a first and second ends, the rotation element being connected adjacent its first end to the housing for rotation about a horizontally directed first rotation axis (element 83 is connected via axis 74 and cover 75 to the housing 70) between a first and second rotational position for closing the access opening of the holder in the second rotational position by means of the cover and releasing the access opening in the first rotational position, whereby the rotation element for pressing the cover and the holder towards each other, when the cover closes off the access opening of the holder, engage at least two mutually different engagement positions (74) located on an external surface of the cover,
(...)
and the cover being rotatably connected (cover 75 is rotatably connected to clamping means 73 over axis 74) to the rotation element for rotation over a limited angle about an engagement rotation axis, which engagement rotation axis extends along the two mutually different engagement positions (74).

2.1. The subject-matter of claim 1 therefore differs from this known apparatus in that:
The cover further comprises a connection located on the external surface of the cover, for the supply of water to the holder, the two mutually different engagement positions each not coinciding with the position on the external surface where the connection is located.

2.2. The skilled person though would regard it as a normal design option to include this feature of a connection for water-supply on the external surface, which does not coincide with the engagement positions, in the apparatus described in document D1 (Fig. 11). Such a feature is described e.g. in Fig. 1 of document D1. The solution proposed in claim 1 of the present application therefore cannot be considered as involving an inventive step (Article 33(3) PCT).

3. Dependent claims 2 to 5 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, give rise to subject-matter that involves an inventive step (Article 33(3) PCT) as all the features introduced with these claims seem to be known while used with a known corresponding effect and seem to be minor workshop variants which come with in the scope of customary practice followed by persons skilled in the art. The reasons therefore being as follows:

3.1. Subject-matter of claim 2 is not inventive because D1 (Fig. 11) shows a rotation element (73) which is movably connected to the cover (75) adjacent to the engagement positions (74).

3.2. Subject-matter of claim 3 is not inventive, because D1 (Fig. 3) shows that the connection (10) is located centrally between the two engagement positions.

3.3. Subject-matter of claim 4 is not inventive, because D1 (Fig. 2 and Fig. 5) shows embodiments in which the connection is located in the center of the external surface of the cover (41, 51).

3.4. The feature of the apparatus having an external surface with a circular design is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill. Subject-matter of claim 5 is therefore not inventive.

Re Item VII

1. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

2. Although claim 1 is drafted in the two-part form, not all the features known from D1 in

combination (as discussed under Item V-2.) are placed in the preamble (Rule 6.3(b) PCT).

3. According to the requirements of Rule 11.13(l) reference signs not appearing in the description shall not appear in the drawings, and vice versa. This requirement is not met in view of the reference sign 6 (p. 5, l. 10 and 12), which can not be found in the drawing.

4. The description refers to Fig. 5 (see p. 6, l. 10) as describing the first rotational position. This should have been corrected to "Fig. 5a" (Article 5 PCT).

Re Item VIII

1. The term "rotation axis" used in claim 6 (Article 6 PCT) is unclear since it is unclear if this refers to the "first rotation axis" mentioned in claim 6 or to the engagement rotation axis mentioned in claim 1. This should have been clarified by rewording "rotation axis" with "first rotation axis".

2. The term "second engagement rotation axis" (see claim 13) is unclear (article 6 PCT) because it presupposes an earlier definition of this axis, which however is not the case.

3. Claims 10-11 and 19 refer to an "opening". It should have been clarified (Art. 6 PCT), if this refers to the access opening or to the outflow opening introduced in claim 1.

Title: Apparatus for preparing coffee

The invention relates to an apparatus for preparing coffee, comprising a holder arranged for receiving a pouch made of filter material and filled with a product to be extracted, the holder comprising at least one outflow opening and one access opening for placing the pouch in the holder, the apparatus further comprising a cover for closing and releasing the access opening and clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder.

Such an apparatus is known from the international patent application WO 94/02059. In this publication, the apparatus, as shown in Fig. 11, is provided with clamping means, which engage a circumferential edge of the cover for pressing the cover and the holder towards each other when the cover closes off the holder. A disadvantage of the known apparatus is that the frequent opening and closing of the holder reduces the reliability of the liquid seal between the cover and the holder. When, in use, under high pressure, hot water is supplied to the holder for preparing coffee, it may therefore happen that water leaks from the holder. This is caused by improper closure of the cover and the holder. If water leaks out, even if only to a slight extent, the pressure in the holder decreases. When the pressure in the holder decreases, this leads to a deterioration of the quality of the coffee extract obtained. This is the case in particular when the outflow opening has such a small diameter that the coffee extract spouts from the outflow opening for obtaining coffee with a small-bubble froth layer (café crème). When the pressure decreases, however, it may happen that the speed at which the coffee extract spouts from the outflow opening is not sufficient for preparing café crème.

The object of the invention is to provide an apparatus that provides a solution to the above-stated problem. The construction should then be so reliable that even after the holder has frequently been closed and opened again, still a reliable seal between cover and holder can be obtained.

To that end, the apparatus according to the invention is characterized in that the clamping means for pressing the cover and the holder towards each other when the cover closes off the access opening engage at least two mutually different engagement positions located on an external surface of the cover, the cover further comprising a connection located on the external surface of the cover, for the supply of water to the holder, the two mutually different engagement positions each not coinciding with the positions on the external surface where the connection is located, the cover being rotatably connected with the clamping means for rotation over a limited angle about an engagement rotation axis, which engagement rotation axis extends along the two mutually different engagement positions. What is achieved in that the clamping means engage at least two mutually different engagement positions located on an external surface of the cover, is that the engagement positions do not each need to coincide with the position on the external surface where the connection is located, and that, moreover, the cover can be connected to the clamping means for rotation over a limited angle about the engagement rotation axis, the engagement rotation axis extending through the two mutually different engagement positions. The engagement positions can then be used for movably connecting the cover and the clamping means and can moreover be used for pressing the cover and the holder towards each other, when the cover is to close off the access opening of the holder. Preferably, therefore, the cover is movably connected to the clamping means at the two engagement positions. More in particular, the connection is located approximately in the center of the external surface of the cover. In this manner, at a central position, water can be supplied to the holder. In particular, the connection is also located approximately centrally of the at least two engagement positions. Then, the force exerted by the clamping means on the engagement positions of the cover when the cover closes off the holder can be equivalent to a force exerted by the clamping means on the

holder at a position coinciding with the center of the cover, where the connection is preferably located.

This has as a result that a good liquid seal between the cover and the holder is obtained at all times. To that end, in particular, the external surface is of at least substantially circular design.

According to a preferred embodiment of the apparatus, the apparatus further comprises a housing to which the holder is detachably connected, the clamping means comprising a rotation element with a first and a second opposite end, the rotation element adjacent its first end being rotatably connected to the housing for rotation about a horizontally directed first rotation axis between a first and a second rotational position, for closing off the access opening of the holder in the second rotational position, and releasing the access opening again in the first rotational position, the apparatus further comprising a closing arrangement for detachably connecting the rotation element, adjacent the second end, with the housing when the cover in the second rotational position closes off the access opening, the cover being attached to the rotation element such that in the second rotational position, the rotation axis extends along a first side of the cover and the second end is located on a second side of the cover, located opposite the first side.

According to a first further elaboration of this embodiment, the first rotation axis is located above a flat plane through the access opening of the holder. An advantage of this embodiment is that the housing can have a relatively narrow design. In this connection, the apparatus can be further characterized in that the plane defined by the first rotation axis and the second end and the plane through the opening include an acute angle when the cover closes off the holder in the second rotational position.

In particular, the cover is movably connected to the rotation element, so that the cover, when the holder is being closed, can optimally position itself relative to the holder.

According to a further elaboration, the engagement rotation axis runs at least substantially parallel to the first rotation axis. When during closure of the cover a part of the edge of the cover initially engages the holder, it is possible, upon further rotation of the rotation element about the first rotation axis, for the cover to simultaneously rotate through a limited angle about the engagement rotation axis. This ensures that the cover is positioned optimally relative to the holder, that is, the cover is positioned such that it seals the holder liquid-tightly. To guarantee, when closing the holder, that the cover and the holder initially engage each other at one point only, the apparatus preferably further comprises spring means which exert such a force on the cover that an underside of the cover comes to lie approximately parallel to the plane defined by the first rotation axis and the second end by rotation of the rotation element about the engagement rotation axis when the cover is lifted off the holder by rotation of the rotation element about the first rotation axis.

According to a highly advantageous embodiment, the spring means comprise a flexible hose which is attached to the cover for supplying hot water to the holder. The flexible hose then has a double function.

The invention will be further elucidated on the basis of the drawing. In the drawing:

Fig. 1 shows a cross section of a first embodiment of an apparatus according to the invention, in which a holder is closed by a cover;

Fig. 2 shows a cross section of the apparatus according to Fig. 1 upon a first step towards opening the holder;

Fig. 3 shows a cross section of the apparatus according to Fig. 1 upon a second step towards opening the holder;

Fig. 4 shows a cross section of the apparatus according to Fig. 1 upon a third step towards opening the holder;

Fig. 5a shows a cross section of the apparatus according to Fig. 1 upon a fourth and final step towards opening the holder;

Fig. 5b shows a front view of the apparatus of Fig. 1 in the condition according to Fig. 5a;

Fig. 6a shows a top plan view of a pouch which can be applied in the apparatus according to Fig. 1; and

Fig. 6b shows a cross section along the plane A-A of Fig. 6a.

Referring to Figs. 1-5b, presently a first embodiment of an apparatus according to the invention will be discussed.

The apparatus 1 for preparing coffee comprises a housing 2, comprising a holder 4 detachably connected to the housing. The holder 4 is arranged for receiving a pouch 6, made of a filter material and filled with a product to be extracted, such as ground coffee, as is shown in Figs. 6a and 6b.

In this example, the pouch 6 consists of an upper sheet 8 and a lower sheet 10, each made of filtering paper. The upper sheet 8 and the lower sheet 10 are each of disc-shaped design and joined together adjacent their peripheral edges 12. This joint forms a circumferential sealing seam 14, closed in itself. The holder 4 is of cup-shaped design and consists of a bottom 16 and an upright, circumferential side wall 18, connected to the bottom. Provided in the bottom 16 is a recess 20, provided with at least one outflow opening 22. At its upper end, the holder is provided with an access opening 24.

The housing 2 further comprises a liquid receiving space 25 which comprises an outflow opening 26. Present in the liquid receiving space 25 is a collecting reservoir 28 of cup-shaped design (of the type described in Dutch patent application no. 10.06039). In a side wall 31 of the collecting reservoir 28, outflow openings 30 are provided. A bottom 33 of the collecting reservoir is, in top plan view, of substantially spherical design. In this example, the liquid receiving space 25 is formed by a cup-shaped element 32, open at the top, which is so designed at its upper end that the holder 4 can be detachably placed on it.

The apparatus further comprises a cover 34 for closing and releasing the access opening 24 of the holder. At its underside, the cover 34 is fitted with

a sealing ring 36, which, in use, can cooperate with the holder 4. At its upper side, the cover comprises a connection comprising an inflow opening 38 and a tubelet which, via a liquid duct 40, is connected to a device 42 for heating hot water. The device 42 is of a type known per se, such as, for instance, a hot water boiler, so that a further explanation on this point can be dispensed with.

The apparatus further comprises a rotation element 44 having a first 46 and second 48 end, located opposite each other. Adjacent its first end 46, the rotation element is connected to the housing 2 for rotation about a horizontally directed first rotation axis 50. The rotation element can rotate about the first rotation axis 50 between a first (see Fig. 5) and a second (see Fig. 1) rotational position. When the rotation element 44 is in the first rotational position, the access opening 24 of the holder 4 is cleared (see Fig. 5a). When, by contrast, the rotation element is in the second rotational position, the holder is closed off, that is, the access opening 24 is closed off by the cover 34 (see Fig. 1).

The apparatus further comprises a closing arrangement 52 for detachably connecting the rotation element to the housing 2 adjacent the second end 48 of the rotation element 44 when the cover 34 closes off the access opening 24 in the second rotational position (see Fig. 1).

As can be properly seen in Fig. 1, the cover 34 is attached to the rotation element 44 such that in the second rotational position the rotation axis 50 extends along a first side 54 of the cover and the second end 48 is located at a second side 56 of the cover, located opposite the first side (see Fig. 2).

The cover 34 is movably connected to the rotation element 44. As can be properly seen in Fig 5b, the cover 34 is connected, at the upper side of its outside surface, to two raised arms 102a and 102b, extending upwards and each comprising an opening104a, 104b, respectively. Extending through each of the openings 104a and 104b is an arm 106a, 106b of the rotation element 44. These arms are much thinner than the openings 104a and 104b. This has

as a result that the cover is movably connected to the rotation element 44. Furthermore, the cover is connected to the rotation element 44 for rotation over a limited angle about an engagement rotation axis 58.

The raised arms 102a, 102b extend upwards from positions on the external surface 100, which positions will be designated hereinbelow as two mutually different engagement positions 108a, 108b. Accordingly, these engagement positions are located at the bottom of the raised arms 102a and 102b. From the drawing, it is clear that the connection 39 for the supply of water to the holder is located at such a position that the two mutually different engagement positions do not each coincide with the position on the external surface where the connection 39 is located. Furthermore, the cover is then connected to the clamping means for rotation over a limited angle about the engagement rotation axis 58, that is, connected to the clamping element 44, comprising the arms 106a, 106b and the raised arms 102a, 102b, the engagement rotation axis 58 extending along, that is, in the proximity of the two mutually different engagement positions. As the openings 104a and 104b are larger than a cross section of the arms 106a and 106b, this means that the cover 34, in addition to being rotatable about the engagement axis 58, is also connected to the rotation element 44 so as to be translatable over a certain distance. Accordingly, the cover is movably connected to the rotation element at the two engagement positions 108a and 108b. The connection 39 is located approximately in the center between the engagement positions 108a and 108b. Furthermore, the connection 39 is located approximately in the center of the external surface of the cover 34. In this example, the external surface of the cover 34 is of circular design. Also, in this example, a line through the at least two engagement positions 108a and 108b is approximately parallel to the first rotation axis 50. This line approximately coincides with the engagement rotation axis 58.

Characteristic of the embodiment according to Figs. 1-5b is that the first rotation axis 50 is located above a flat plane 60 through the access

opening 24 of the holder 4 (Fig. 1). The first rotation axis is parallel to this plane 60. Further, the engagement rotation axis 58 runs at least approximately parallel to the first rotation axis 50. Thus, the cover is connected to the rotation element 44 for rotation about the engagement rotation axis through a limited angle of rotation.

As can be properly seen in Fig. 1, the plane 64 defined by the first rotation axis 50 and the second end 48, and the plane 60 through the access opening 24 include an acute angle α when the cover closes off the holder in the second rotational position. An intersecting line 66 of the two last-mentioned planes is located adjacent the second end 48.

The apparatus further comprises spring means 62a and 62b, which exert such a force on the cover 34 that the cover rotates about the engagement rotation axis 58 in a direction such that angle α is reduced when the cover is lifted off the holder by rotation of the rotation element 44 about the first rotation axis 50 (see also Fig. 5a). In this example, the spring means 62b comprise inter alia the flexible duct 40.

The apparatus further comprises clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder.

When the cover is in the second position, the clamping means engage the outer surface 100 of the cover at at least two mutually different engagement positions 108a and 108b. In this example, the clamping means comprise the rotation element 44 with the arms 106a, 106b, and the raised arms 102a, 102b.

The operation of the apparatus is as follows. First, the closing arrangement 52 is operated so that the cover 34 can be lifted off the holder 4 by means of rotation of the rotation element 44 about the first rotation axis 50. The resultant situation is shown in Fig. 5a. Then the pouch 6, as shown in Figs. 6a and 6b, is placed in the holder 4. To that end, the holder 4 can be removed from the housing 2, whereafter the holder 4, together with the pouch

6, is replaced in the housing 2. Then, the cover can be closed by moving the first end 46 of the rotation element 44 downwards, the rotation element 44 thereby rotating about the first rotation axis 50. The spring means 62a, 62b provide that such force is exerted on the cover that an underside of the cover comes to lie approximately parallel to the plane defined by the first rotation axis and the second end, by rotation of the rotation element about the engagement rotation axis when the cover is lifted off the holder by rotation of the rotation element about the first rotation axis. This means that, during closure, the second side 56 of the cover first of all contacts the holder 4. At that time, the arms 106a, 106b of the clamping element 44 do not yet press on the arms 102a, 102b of the cover. When, subsequently, the second end 48 is moved further downwards, the first side 54 of the cover will be gradually moved in the direction of the holder 4. In the process, the angle β between the plane 64 and the plane 90 through the underside of the cover 34 will increase from approximately 0 degrees (Fig. 4) to a value of α (in Fig. 1). As a result of this movement, it is provided that the cover 34 is placed symmetrically on the holder 4. This situation is shown in Fig. 3.

Thereupon, the closing arrangement 52 is operated, with the result that the second end 48 of the rotation element 44 is pressed down. As a result, the arms 106a, 106b will press on the arms 102a, 102b in a vertically downwardly directed direction. The result is that the cover 34 is pressed upon at a position which, in effect, is located approximately in the center of the external surface of the cover. The force between the sealing ring 36 on the one hand and the holder 4 on the other hand will then be approximately the same at every point of the sealing ring. The deformation of the sealing ring will therefore be likewise approximately the same at every point of the sealing ring. As a result of this last, in turn, an optimum and reliable seal between cover and holder has been obtained. Then the closing arrangement 52 is further operated (see Figs. 1 and 2) for locking the rotation element.

In this example, the closing arrangement 52 is provided with an operating lip 76 which is connected to the rotation element 44 adjacent the second end 48 for rotation about a rotation axis 78. Further, the closing arrangement 52 comprises a closing lip 80 connected to the operating lip 76 for rotation about a rotation axis 82. In the closed position, as is shown in Fig. 1, the rotation axis 82 is located under the rotation axis 78, while further the distance between the rotation axis 78 and the holder 4 is smaller than the distance between the rotation axis 82 and the holder 4. In this example, a free end 84 of the closing lip 80 hooks under a projection 86 of the housing 2. When the closing arrangement 52 is to be opened, a free end 88 of the operating lip 76 is moved upwards, as is shown in Fig. 2. As a result, the free end 84 of the closing lip 80 will move downwards (see Fig. 2), so that the free end 84 can be detached from the projection 86. This situation is shown in Fig. 3. A spring 62c provides that the free end 84 moves in a direction away from the housing 2 and thus becomes automatically detached from the projection 86. This situation is also shown in Fig. 3. Then, the operating lip 76 is moved further upwards (see Fig. 4), whereby the angles α and β are reduced. Then the cover can be opened further, as shown in Figs. 5a and 5b. For closing the cover, the steps discussed with reference to Figs. 1-5b are traversed in the opposite direction.

It is noted that the advantage of the closing arrangement 52 described above is that opening and closing the closing arrangement can be performed through a very light operation of the operating lip 76. As a result of the temporary downward movement of the closing lip 80, when the operating lip 76 is moved upwards (see Fig. 2), and the opposite effect of the closing lip 80 moving upwards when the operating lip 76 is moved downwards, a stable situation is achieved in closed condition, as shown in Fig. 1. Furthermore, by moving the operating lip from the position shown in Fig. 2 to the position shown in Fig. 1, the rotation element 44 is rotated counterclockwise about the rotation axis 50. so that the cover 34 is properly pressed onto the holder 4.

In the closed position, as shown in Fig. 1, hot water can subsequently be supplied to the duct 40. This hot water is supplied via the cover 34 to the top of the pouch 6. This hot water passes through the pouch and proceeds to collect as coffee extract in the recess 20. Then the coffee extract spouts through the spout opening 22 into the collecting reservoir 28. The collecting reservoir 28 is thus filled with coffee extract. As the coffee extract spouts into the surface of the liquid in the collecting reservoir 28, a good café crème is formed. This café crème flows via the outflow opening 30 out of the collecting reservoir to leave the housing via the outlet opening 26.

The invention is not in any way limited to the embodiments described hereinbefore. Thus, other embodiments of the closing arrangement 52 are conceivable. Also, the holder and the cover can have other forms than shown. The holder and the cover can have, for instance, a square instead of a circular cross section. Also, it is not necessary to employ a collecting reservoir 28 as shown in the drawing.

Such variants are understood to fall within the scope of the invention.

Claims

1. An apparatus for preparing coffee, comprising a holder arranged for receiving a pouch made of filter material and filled with a product to be extracted, the holder comprising at least one outflow opening and one access opening for placing the pouch in the holder, the apparatus further comprising a cover for closing and releasing the access opening and clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder, characterized in that the clamping means for pressing the cover and the holder towards each other, when the cover closes off the access opening of the holder, engage at least two mutually different engagement positions located on an external surface of the cover, the cover further comprising a connection located on the external surface of the cover, for the supply of water to the holder, the two mutually different engagement positions each not coinciding with the position on the external surface where the connection is located, and the cover being rotatably connected to the clamping means for rotation over a limited angle about an engagement rotation axis, which engagement rotation axis extends along the two mutually different engagement positions.

2. An apparatus according to claim 1, characterized in that the cover is movably connected to the clamping means, adjacent the two engagement positions.

3. An apparatus according to claim 1 or 2, characterized in that the connection is located approximately centrally of the at least two engagement positions.

4. An apparatus according to any one of the preceding claims, characterized in that the connection is located approximately in the center of the external surface of the cover.

5. An apparatus according to any one of the preceding claims, characterized in that the external surface is of at least substantially circular design.

6. An apparatus according to any one of the preceding claims, characterized in that the apparatus further comprises a housing to which the holder is detachably connected, the clamping means comprising a rotation element with a first and second opposite ends, the rotation element being connected adjacent its first end to the housing for rotation about a horizontally directed first rotation axis between a first and second rotational position for closing the access opening of the holder in the second rotational position and releasing the access opening in the first rotational position, the apparatus further comprising a closing arrangement for detachably connecting the rotation element to the housing adjacent the second end when the cover closes off the access opening in the second rotational position, the cover being connected to the rotation element such that in the second rotational position the rotation axis extends along a first side of the cover and the second end is located on a second side of the cover, located opposite the first side of the cover.

7. An apparatus according to claim 6, characterized in that a line through the at least two engagement positions is located approximately parallel to the first rotation axis.

8. An apparatus according to claim 6 or 7, characterized in that the first rotation axis is above a flat plane through the access opening of the holder.

9. An apparatus according to claim 8, characterized in that an underside of the cover is located at least substantially below a plane defined by the first rotation axis and the second end when the cover closes off the holder in the second rotational position.

10. An apparatus according to claim 9, characterized in that the first rotation axis is parallel to the plane through the opening.

11. An apparatus according to claim 9 or 10, characterized in that the plane defined by the first rotation axis and the second end and the plane through the opening include an acute angle when the cover closes off the holder in the second rotational position.

12. An apparatus according to claim 9, 10 or 11, characterized in that the plane defined by the first rotation axis and the second end and the plane through the opening have an intersecting line located adjacent the second end when the cover closes off the holder in the second rotational position.

13. An apparatus according to claim 12, characterized in that the second engagement rotation axis is connected to the rotation element, the engagement rotation axis being at least approximately parallel to the first rotation axis.

14. An apparatus according to claim 13, characterized in that the apparatus further comprises spring means which exert such a force on the cover that an underside of the cover comes to lie approximately parallel to the plane defined by the first rotation axis and the second end by rotation of the rotation element about the second engagement rotation axis when the cover is lifted off the holder by rotation of the rotation element about the first rotation axis.

15. An apparatus according to claim 14, characterized in that the spring means comprise a flexible hose which is connected to the cover for supplying hot water to the holder.

16. An apparatus according to claim 5, 6 or 7, characterized in that the first rotation axis is located at least approximately in a flat plane through the access opening of the holder.

17. An apparatus according to claim 16, characterized in that an underside of the cover is located at least substantially in a plane defined by the engagement rotation axis and the second end when the cover closes off the holder.

18. An apparatus according to claim 17, characterized in that the first rotation axis is parallel to the plane through the access opening.

19. An apparatus according to claim 17 or 18, characterized in that the plane defined by the engagement rotation axis and the second end and the plane through the opening extend at least approximately parallel when the cover closes off the holder in the second rotational position.